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ABSTRACT

This study reviews and synthesizes evidence from six recent investigations providing data on a total of 112 formal interorganizational arrangements (IOA's) that support educational improvement efforts. The synthesis was undertaken to ascertain how the nature, processes, interactions, and outcomes of such collaborative arrangements can support school improvement. A brief synopsis of each study describes the basic features and assumptions of the IOA's, the study methodology, and the primary findings and interpretations. The cross-study synthesis is then organized around three topics: (1) classification of IOA's according to legal status of the IOA itself and the improvement effort it supports; (2) comparison of various types of IOA's by history, context, structure, operations, and outputs; and (3) a synthesis of key findings, including general cross-study findings and predominant cross-study outcomes in six categories: power and status changes, linkage changes, knowledge transfer, capacity building, practice improvement, and institutionalization. In the final section, implications of the synthesis are provided, respectively, for managers, policymakers, and researchers concerned with educational dissemination and school improvement. References are included. (Author/TE)

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COLLABORATIVE ARRANGEMENTS THAT SUPPORT SCHOOL IMPROVEMENT: A SYNTHESIS OF RECENT STUDIES

Carolyn S. Cates

April 1983

FAR WEST LABORATORY FOR EDUCATIONAL RESEARCH AND DEVELOPMENT
1855 FOLSOM STREET
SAN FRANCISCO, CALIFORNIA 94103

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ABSTRACT

This study reviews and synthesizes evidence from six recent investigations of formal interorganizational arrangements that support educational improvement efforts. The six studies provide data on a total of 112 arrangements. The central organizing question for the synthesis is: What can be learned from these studies about the nature, processes, interactions, and outcomes of collaborative arrangements that can facilitate the use of this mechanism to support school improvement? A brief synopsis of each study covers three topics: the basic features and assumptions of the arrangement(s); the essential features of the study methodology; the primary findings and interpretations. The cross-study synthesis is organized around three topics. (1) The IOAs are classified according to the legal status of the IOA itself and the improvement effort it supports. (2) Characterics tics of various types of IOAs are compared using five dimensions: history, context, structure, operations, and outputs. (3) A synthesis of key findings includes general cross-study findings and predominant cross-study outcomes in six outcome categories: power and status changes; linkage changes; knowledge transfer; capacity building; practice improvement; and institutionalization. Implications are directed to three audiences: those who manage and administer improvement programs; those who make policy to facilitate educational improvement; and those engaged in research on educational dissemination and school improvement.

I. EXECUTIVE SUMMARY

Purpose

Over the last twenty years, formal interorganizational arrangements (IOAs) have become an important mechanism for supporting educational improvement. Examples of IOAs include federally-sponsored Teacher Corps projects, state sponsored cooperative regional educational service agencies, and local-level collaborative efforts such as school study councils, special education consortia, and individually guided education leagues. Although no one knows how many educational IOAs there are, estimates range from 2,000 to 4,000 nationwide. Yet, despite their apparent ubiquity and utility, interorganizational arrangements themselves have received little attention. Only recently have educational researchers begun to identify and examine IOAs.

The purpose of this synthesis is to review the evidence from six recent investigations of formal collaborative arrangements among educational organizations, and to derive from the studies a set of conclusions and implications for three audiences: those who manage and administer improvement programs; those who make policy to facilitate educational improvement; and those engaged in research on educational dissemination. The central organizing question for the synthesis is:

- What can be learned from these studies about the nature, processes, interactions, and outcomes of collaborative arrangements that can facilitate the use of this mechanism to support school improvement?

The six studies included in the synthesis are:

A. Yin, R. K., M. Gwaltney, and J. A. Molitor. Organizations Collaborating to Improve Educational Practice (two volumes). Cambridge, MA: Abt Associates, April 1981.

This study examined three regional education service agencies based on collaborative arrangements among local school districts. The case study of each arrangement gives special attention to three knowledge utilization services: technical assistance, information retrieval, and staff development. The key findings in each case study and in the cross-case analysis are organized around goods and services outcomes, utilization outcomes, and dysfunctional outcomes.

B. Havelock, R. G., M. Huberman, N. Levinson, and P. Cox. School-University Collaboration Supporting School Improvement (four volumes). Washington, D. C.: Knowledge Transfer Institute, The American University, 1981 (Volumes I-III); 1982 (Volume IV).

Each of the three arrangements in this study consisted of a college of education linked with a set of surrounding school districts. The goal was to identify and analyze the functional

connections and knowledge transfer flows within the arrangements through an indepth case study of each and a cross-case analysis. Outcomes are identified in six categories especially relevant to knowledge utilization and educational improvement: power and status changes; linkage changes; knowledge transfer; capacity building; practice improvement; institutionalization. There are three levels of outcome analysis: individual, organizational, and interorganizational. The cross-case analysis also includes a general model of cause-effect relations and outlines an integrated theory of IOA development and institutionalization.

C. TDR Associates. Case Studies of Three Urban University-School Collaboratives Mandated for the Improvement of Educational Practice (two volumes). Newton, MA: TDR Associates, 1981.

The primary purpose of this study was to examine the knowledge exchange and improvement efforts in three school-university pairings mandated by a federal court order as part of a city-wide desegregation plan. The focus was on the types of knowledge exchanged and the effect of each; the IOA structures that affected the knowledge exchange process; and the key roles and relationships in the pairings. In addition to findings in each of these areas, the study presents a conceptual model of interorganizational arrangements for knowledge utilization in urban settings as a tool for explaining the outcomes and effects of the pairings.

D. McKibbin, S. Successful Collaboration for School Improvement: A Case Study. San Francisco, CA: Far West Laboratory for Educational Research and Development, 1981.

This case study describes a consortium between a county office of education and surrounding elementary school districts established to help districts meet proficiency assessments requirements set by the state legislature. The study findings highlight four factors contributing to the IOA's success: a strong collaborative environment and history; access to increased resources; the local autonomy maintained by member organizations; the strong leadership provided by the IOA coordinator.

E. Cates, C. S. Industry-Education Collaboration for School Improvement. San Francisco, CA: Far West Laboratory for Eductional Research and Development, 1981.

The purpose of this study was to provide a descriptive overview of one form of business-education collaboration with examples of one local industry-education council and one state-wide network of councils. The local council consisted of business and industry organizations, community colleges, local school districts, and a county office of education. The study findings attributed the council's success to the IOA's position as "neutral turf"; the feeling of mutual IOA ownership among members; the strong committment to the council by member executives; the demonstrated IOA results.

F. Cates, C. S., P. D. Hood, and S. McKibbin. An Exploration of Interorganizational Arrangements that Support School Improvement. San Francisco, CA: Far West Laboratory for Educational Research and Development, 1981.

The purpose of this study was to identify a variety of arrangements in a 13-county geographic area and to describe the characteristics of the predominant types of arrangements. The 103 IOAs identified were classified according to the legal status of the IOA and the improvement effort it supported. The characteristics of the nine sub-groups or types of IOAs are described in terms of five dimensions: history, context, structure, operations, and outputs. Findings are also reported about types and combinations of participating organizations, between-county differences in IOA activity, IOA distribution within the classification system, and organizational participation in IOA categories.

Together, the six studies provide data about 112 interorganizational arrangements for the synthesis findings and conclusions.

The studies share several features that make them particularly useful for a synthesis of findings. First, each of the six studies in the synthesis, as well as the synthesis itself, was supported by the Research and Educational Practice Unit of the National Institute of Education as part of a larger effort to develop a more comprehensive understanding of how various types of educational organizations relate to one another in accomplishing school improvement projects.

Second, they all were conducted within the same two-year time period between 1979 and 1981. Thus, they share the same larger, national contextual environment influencing educational agencies and improvement programs.

Third, in general, they share a common definition of interorganizational arrangements. With some minor variations, an interorganizational arrangement (IOA)* is defined as a formal collaborative arrangement of some enduring significance between or among two or more permanent organizations. The main feature of the definition is the notion of organizations collaborating or "doing something together" such as pursuing common programmatic goals, establishing consensus over valued domains, or acquiring, exchanging, or allocating resources (Stern, 1979). For these studies, the focus was further limited to IOAs that are for the purpose of exchange or delivery of knowledge and/or other resources in support of school improvement effort, primarily in the practice improvement areas of elementary and secondary instruction and curriculum.

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*Hereafter, the following terms are used interchangeably: "interorganizational arrangement," "collaborative arrangement," "arrangement," and "IOA."

Procedures and Organization of the Synthesis

A brief synopsis of each study has been prepared in a common format and level of discourse to provide readers with essential facts of each study relevant to this synthesis. Each synopsis covers these topics:

1. The basic features and assumptions of the collaborative arrangements, including the major goal(s) and assumptions of the improvement efforts supported by arrangements.

2. The essential features of the methodology used to conduct the study.

3. The primary findings and interpretations of the study.

Synthesis findings and implications were derived from comparison and contrast of findings across the six studies, taking into account differences in arrangements and study methodologies.

Each synopsis has been reviewed and validated by a major author of the study to ensure that the summarized study facts have been accurately presented and interpreted, and to provide the study authors an opportunity to clarify and update their reports in light of further analysis or insights. However, the synthesis author assumes full responsibility for arguments, interpretations, generalizations, and implications developed in the synthesis itself.

The synopses are presented in section three. Section four includes the cross-study synthesis and a summary of major synthesis findings. Implications and propositions for further study are presented in section five.

Major Synthesis Findings

Formal Collaborative Arrangements Are Widespread and Effective. Formal collaborative arrangements are widely and effectively used to support school improvement efforts. The common view of education organizations, especially of school districts, is that they are generally isolated from one another and that they make few attempts and provide few opportunities to exchange or share resources except through the personal, social, usually informal networks of their own personnel. These studies reveal the existence of a multitude of formal arrangements through which organizations share and exchange numerous resources to accomplish a wide variety of school improvement efforts. In addition, the studies suggest a multiplicity of connections among collaborating organizations. All six studies strongly indicate that most of the organizations in any given IOA have multiple past and present linkages with many other IOA members. These connections are both formal and informal, both interpersonal and interorganizational.

Most Formal Collaborative Arrangements Arise in Response to External Influence. Most IOAs are initiated in response to some external influence in the form of a mandate or enablement for the improvement effort, the arrangement, or both. The study by Cates, Hood, and McKibbin found that, of the 103 IOAs identified in the San Francisco Bay area, 86 percent

originated in response to some type of external influence. Of the eleven IOAs examined in the five case studies, only the Industry Education Council (Cates, 1981) was established solely or predominantly with only member support. Both federal and state influence are evident here. In California, the abundance of IOAs influenced by state programs clearly reflects the emphasis placed on collaboration by the state education agency and the state legislature. In fact, virtually every state improvement program initiated over the past ten years has specified collaboration as one means of participating in the program. For the most part, collaboration has been encouraged rather than required, whether the improvement effort itself was required or not. However, the California State Department of Education has used a variety of incentives and rewards to encourage particular collaboratives and to foster a general collaborative environment. State-level interest and support is also found in the case studies conducted by Yin, Gwaltney, and Molitor and by TDR.

Collaborative Arrangements Can Survive. Where collaborative improvement efforts are important to participating organizations, they can and do survive the reduction or elimination of external support or requirements. Three studies provide evidence for this finding. Support for two of the three teacher center sites described by Havelock and colleagues was provided either by a federal program or by a foundation. The centers not only survived after external support ended, they maintained or even increased their vitality. In both instances, additional subsites or centers were established. The arrangement among school districts in northern Colorado that Yin, Gwaltney, and Molitor studied had strong federal and state support during its first eight years of operation. Despite difficulties that arose after deep cuts in external support, the arrangement had still managed to provide a variety of services during the three years that preceded the study. A different survival pattern is evident in McKibbin's case study of the Elementary Proficiency Assessment Consortium. In that case, the improvement effort, not the IOA, was mandated. After the consortium had accomplished its original objectives, members enlarged the scope of their objectives and planned to continue their joint tasks.

No One Kind of Arrangement Seems Superior. There is a wide range of workable combinations of organizations for collaborative arrangements, and no one combination seems clearly superior for school improvement or knowledge utilization purposes. Cates, Hood, and McKibbin examined 103 IOAs and identified twenty different combinations of organizations. Four combinations accounted for nearly three fourths of these IOAs: school districts (LEAs) and county offices accounted for 40 percent of the total; LEAs and institutions of higher education for 11 percent; LEAs and institutions of higher education for 11 percent; LEAs and other LEAs for 11 percent; and LEAs and educational R&D agencies for 11 percent. There was no evidence that any one combination was more likely to succeed than others. The predominance of four combinations and the presence of LEAs in all four combinations is a logical consequence of their members' roles and relationships, especially in school improvement efforts.

Structure Has Little Influence on Effectiveness. Structure appears to have little influence on IOA effectiveness or outcomes. While some structural factors can impede or enhance the collaborative process, there was no evidence that one structure was superior to another. In particular,

the level of formality seemed to have little if any influence on the effective delivery or exchange of resources.

Collaborative Arrangements Follow a Predictable Course. The development and continuation of collaborative arrangements follow a natural, predictable, and complex course, regardless of the particular improvement effort supported and of the presence or absence of external influence.

Predominant Cross-Study Outcomes

For the most part the outcomes are those found in the five case studies, which examined individual IOAs in much greater detail than did the exploratory study. The outcomes are grouped in six categories developed by Havelock et al. for identifying specific outcomes at three levels (individual, organizational, interorganizational). These categories are equally applicable to the other studies and are particularly useful in focusing attention on improvement and knowledge utilization issues. The six outcome categories are:

- Power and status changes
- Linkage changes
- Knowledge transfer
- Capacity building, maintenance, and growth
- Practice improvement
- Institutionalization

Power and Status Changes. As Huberman, Levinson and Havelock (1981) point out, any new institutional entity, whether organizational or interorganizational, provides an opportunity for the potential shift or alteration in the existing field of individual and organizational social forces. Indeed, individuals and/or organizations often seek such changes either because the changes offer possible enhancement in standing (status) or increased ability to achieve desired goals (power).

Although numerous changes reported were associated with this category, there appeared to be no consistent pattern of changes across the studies at the individual or organizational levels.

However, one outcome did consistently appear across the studies (though usually addressed indirectly). Namely, member organizations, both individually and collectively as an IOA, did increase their power to act and to achieve their goals. The difficulties of some IOAs notwithstanding, all were judged to be largely effective in carrying out the improvement efforts agreed upon by members. Individual organizations, especially LEAs, were able to increase their access to a larger pool of resources represented in the IOA itself, as well as increasing their access to resources external to themselves and the IOA (e.g., consultants, information, training) arranged for by the IOA or available only as a result of IOA membership (e.g., new or additional federal or state funds provided only to IOA members).

Linkage Changes. Important changes in linkage were evident across all six studies. First, whether an IOA provided first time connections for all or some of the member organizations or were additions to numerous past and present ties, they provided new channels of communication, resource exchange, and interorganizational understanding. In this way, they enlarged the scope or perspective that each member organization had on its own immediate environment and on the larger environment of the IOA as a whole.

Second, in several instances the IOA itself provided or stimulated linkage opportunities for individuals or sub-units in addition to the official organizational representatives. For example, activities in many of the IOAs, particularly staff development workshops, were either open to or designed to include participation by a variety of LEA staff in addition to IOA representatives. These linkages increased the number and variety of ties and exchange opportunities for individuals within member organizations.

Third, in most instances, the IOAs examined were additions to numerous other IOAs existing among different sub-units and involving different individuals in many or all of the same member organizations. This was particularly apparent in the exploratory study, where it was not unusual for a core group of organizations in one IOA also to be involved in two to five other IOAs.

Clearly, even the simplest single IOA can, and usually does, involve multiple complex ties among members which change the nature of relationships among members and strengthen their interdependencies. In addition, the multiple IOAs increase the multiplexity of ties and interdependencies among many IOA members. Unfortunately, because the focus of the case studies was on a single IOA or related set of IOAs, the extent and effects of these multiple IOA ties could not be clearly identified or examined. Thus, it is not yet possible to see the extent to which IOAs create broader or deeper interdependencies among organizations.

Knowledge Transfer. In three of the studies (Yin, Havelock, TDR) knowledge transfer was a specific focus of investigation. Of particular interest were the amount and types of knowledge transferred. Although the other three studies were more broadly focused on school improvement, they provide both direct and indirect support for the major knowledge transfer outcomes of the first three studies.

Taken together, the six studies show that a very substantial amount of knowledge is transferred through collaborative arrangements. In addition, there is often a great diversity of content, especially in IOAs with a specific knowledge utilization or staff development focus as shown in the Yin and Havelock cases. Moreover, there is usually a mix of activities through which the knowledge is transferred. With the exception of formal courses which are usually associated only with staff development arrangements or services, the activity mix in most IOAs in these studies includes some form of all the goods and services outcomes identified by Yin: workshops; training information and materials; educational products; phone and on-site assistance; answers to phone and in-service requests for information. The activity mix itself appears to provide a necessary

redundancy for reinforcing both the knowledge content and the ties among individuals and organizations in the arrangement.

The predominant types of knowledge exchanged in the case study IOAs were situational or craft knowledge or some combination of the two. By comparison, research knowledge was rarely the focus of exchange in an IOA unless the purpose of the IOA was to conduct research or to carry out a task that specifically required research based information. This was the case even in the three IOAs that provided information retrieval services. Although these services did include research based information, it was not necessarily the primary type of information provided to requestors. Craft knowledge appeared to be equally the source of responses to requests.

The explanations given for this are twofold. First, LEA personnel are simply more interested in and more receptive to knowledge derived from or validated by experience (usually situational or craft knowledge) than knowledge explicitly based on research with little or no evidence of experience validation. In fact, the TDR study suggests that situational knowledge forms the basis of all knowledge resource exchanges and that until the need for situational understanding is satisfied, real progress cannot be made toward exchange of craft or research knowledge.

In addition, where IHEs are the major LEA partners, the TDR study suggests that the "predominant type and focus of the University/College (i.e., research, teaching, service) affects the emphases of the Pairing project (IOA) and activities, and hence the nature and extent of knowledge flow/use for school improvement." In general, the rationale is that in IHEs with a primary, major focus on research there is less interest in serving LEAs or in participating in IOAs, fewer previous ties, and less understanding of the LEAs' particular situations. These factors will cause greater difficulties in developing the IOA itself and impede the progress of the overall knowledge transfer. In contrast, IHEs with a major emphasis on service and teaching will have more prior contacts, better situational understanding of its LEA partners, and more interest in craft knowledge--all of which will make IOA development easier. But, research knowledge will be less available or less sought out by either the IHE or the LEA participants. Although this explanation is supported in part by the Clark and Guba (1977) and Lotto and Clark (1978) studies on institutions of teacher education, it also creates a Catch-22 for the use of research knowledge in IOAs involving IHEs.

Capacity Building, Maintenance and Growth. In the Havelock study from which this outcome category was drawn, "both individuals and organizations were viewed as systems requiring continuing input, throughput activity and output to maintain themselves in some sort of steady state and to grow" (Havelock, IV, p. 188). Direct and indirect evidence from the five case studies and mostly indirect evidence from the exploratory study indicate several areas of improved or increased capacity for individuals and organizations. In addition, when IOAs are viewed as systems (as they are in the conceptual models developed in the Havelock and TDR studies) an additional set of outcomes can be identified.

For individuals--usually teachers--the IOAs provided two kinds of capacity improvement or opportunities for capacity improvement. First,

they generally provided increased access to a variety of practice-relevant resources including expertise, information, training and materials. For individuals who actively made use of the increased resources the outcomes were generally expressed as an increased level of confidence, a sense of rejuvenation or revitalization and enthusiasm for their work, or a sense of getting back into the mainstream of professional knowledge and practice. In some instances, where several individuals from the same organization, usually a school building, had jointly participated in staff development activities, increased capacity was reflected in a new or enhanced esprit de corps among them. In other instances where IOA member representatives were responsible for planning and carrying out IOA tasks, they increased their capacity in working collaboratively.

Second, IOA staff members often were able to explore new roles and functions involved in coordinating the collaborative activities and services. For example, some were able to expand their skills in group facilitation, and bargaining and negotiating, as well as their general coordinating and managing skills. They also were able to increase contacts through the IOA. For others, their new role allowed them to increase their knowledge and understanding of other educational organizations and to learn new roles and functions (e.g., consulting, providing technical assistance) involved in serving as a linking agent. In some instances individual involvement in the IOA either as a participant or IOA staff also served as a career development path as an LEA staff member moved to an REA position or a graduate student increased or shifted an interest in a linking agent career.

At the organizational level, as at the individual level, IOA membership generally provided increased access to resources, either through the enlarged pool of resources represented in the IOA as a whole, (e.g., a larger amount of money and staff time to donate to a common task), additional external resources arranged for by the IOA (e.g., consultants from non-IOA organizations), or having a larger variety of services available from the IOA itself. Active organizational participation (as opposed to nominal membership) also often reflected an increased capacity for the organization to carry out its own responsibilities or to improve the delivery of services to its own staff or constituents. For example, LEAs participating in staff development arrangements usually increased the number and variety of staff development opportunities for their teachers.

It should be noted that changes in organizational capacities were in the nature of fine tuning or improving existing capacities. There were few instances in which the changes provided a totally new capacity or involved a major, fundamental change on the part of the organizations as an outcome of IOA membership, largely because there were few instances in which organizations were interested in fundamental capacity changes. In addition, the purposes of the IOAs were usually associated with a particular, sometimes narrow, function or area of organizational service or operation rather than with the overall organization.

Practice Improvements. From one point of view, practice improvement outcomes (e.g., adoption of a new skill or procedure for teaching or administration) were disappointing across the six studies. Only in the

Havelock study were practice improvements a consistently prominent outcome, but in that study the investigators emphasized that "Practice improvement was a prominent stated goal of all three IOAs and specific citings of such improvements were legion, especially at the teacher and school levels" (Havelock IV, p. 188). However, three factors can temper that disappointment. First, the major focus and primary unit of analysis of all the studies was on the IOA itself rather than the particular practice improvement effort(s) being supported by the IOA. Second, most of the IOAs included in the six studies were supporting rather than directly implementing improvement efforts by member organizations. As a result, the IOAs and their services were in an intermediate position between the problems and needs of members and the available solutions or improvements.

Third, the richly and carefully documented outcomes of the Havelock cases indicate that where practice improvement is a specific goal of the collaboration, improvements can and do occur.

From another point of view, the IOAs themselves can be seen as an important practice improvement for member organizations. For example, in virtually all instances the collaborations could be and were seen as a solution to the specific problems (e.g., needed additional or different resources). In many instances they also represented improved service delivery practices. Finally, collaboration per se can be seen as an improved problem solving strategy or practice on the part of member organizations. This improvement was particularly apparent where a core group of organizations repeatedly or simultaneously worked together for specific improvement purposes.

Institutionalization. It is useful to consider institutionalization in two ways: institutionalization outcomes of the particular IOAs; institutionalization of the concept or practice of collaboration within member organizations. The difference is illustrated in these two questions:

- What is the likelihood that IOAs examined in the six studies will continue over a substantial period of time?
- If the particular IOAs were dissolved, would their respective member organization be likely to engage in other collaborative efforts?

In answer to the first question, all 11 IOAs examined in the five case studies were judged likely to continue, albeit with real and potential difficulties noted for two arrangements. This finding has considerable value in demonstrating the common features that contribute to continuation and institutionalization across different types of IOAs established for different purposes, having different structures, operations, and different sources of support. In general, the causes of continuation and institutionalization that were identified from the three LEA-IHE cases in Havelock's study are supported by the findings in the other eight cases. These causes can be summarized as follows:

- Causes of Continuation

  Rewards and benefits experienced by members and strengthened organizational ties

  Continuing sense that real needs are being served

  Degree of competition from non-IOA sources.

- Causes of Institutionalization

  Sustained support from member organizations as reflected in dollars, attitudes and behaviors

  Continuing and varied activities that mutually engage staff in member organizations

  Strong leadership continuity.

The answer to the second question is also affirmative. It is likely that, in most instances, IOA members would collaborate again if the existing arrangements were dissolved. Although this finding is speculative, it is more broadly based in that it draws on the exploratory study findings about 103 arrangements as well as the five case studies. The key point here is the extent to which IOA member organizations engage in other collaborative efforts and the degree of support for collaboration in the general environment as well as in member organizations. With only two exceptions there was evidence that the case study IOAs and the exploratory study IOAs were only one of several collaborative efforts of members Also, the general collaborative environments of the IOAs were given high or medium ratings indicating substantial to moderate external support or encouragement for cooperation. In the long term, it may be more important for educational organizations to maintain positive attitudes about collaboration and to repeat effective collaborative behaviors than for the particular IOAs to be continued. The evidence from these studies indicates that such attitudes and probable behaviors do exist in several different states among numerous organizations and for a variety of improvement purposes.

Implications for Simple Arrangements

These implications are intended specifically as aids for individuals and organizations that participate directly in arrangements. However, they should also be of interest to external parties to better understand how IOAs work and to establish realistic expectations for external support.

1. The development and continuation of interorganizational arrangements follows an identifiable process and pattern. Like its member organizations and the process of improvement itself, IOAs are constantly evolving in predictable stages of development. The following summary of IOA stages or phases adapted from the Havelock study (Havelock IV, p. 13-14) outlines factors influencing this evolution.

The evolution of IOAs can be divided into two phases. The development phase covers the period from the historical antecedents to full operation. Full operation or development can be reflected by: the variety of activities; extent of use of IOA services or participation in IOA activities; and the number of long term collaborations among members. The second phase involves continuation of the fully developed arrangement and includes institutionalization, i.e., long term continuance of the arrangement as an operational entity.

Development is influenced by three factors. The first is diversity of objectives which allows the IOA to meet the varied needs and interests of members while focusing on their common improvement effort. The second factor is the set of stabilizing forces in the IOA's environment. These forces include: the predisposing conditions among member organizations, especially a history of prior collaboration; the assistance and service orientations of member organizations (i.e., the willingness of member organizations to seek assistance or provide services. The stabilizing forces are balanced by catalytic forces that stimulate change. These include: the level of need or concern for changing the existing situation; the emergence or availability of dynamic leadership; the introduction of a new idea about what the IOA might accomplish; the availability of slack fiscal resources (in many instances preferably new fiscal resources, at least temporarily). The convergence of these forces leads to bargains among member organizations which, with the leader's energy and skill, bring the IOA to life.

During the early phases of development there is likely to be much trial-and-error activity as members weigh the competing forces, clarify goals and objectives, and establish mutual trust and methods of operation. There may be several detours before the group identifies a more direct route to effective cooperation. As the group moves toward full development, greater stability will emerge with clearer, though still diverse, objectives and a variety of activities. The movement to full development will likely take at least a full year, depending on the scope and complexity of the improvement effort itself and the level and nature of IOA support for the improvement.

Continuation of the arrangement depends on the occurence of a first level of outcomes in the form of the rewards and benefits experienced by IOA members and increased or strenghtened interorganizational ties. In addition, there must be a continuing sense that real needs are being served. There also must be a sense that the resources, services, and activities of the IOA are equal or superior to competing sources available to members. Where these factors occur they will lead to a renewed agreement to continue the arrangement. Usually, the early agreements are for one academic year. At later stages they may cover multiple years.

Finally, institutionalization emerges from these elements. Member organizations must provide sustained support that is demonstrated in attitudes, behaviors, and dollars. Ideally, the support should come from all members. However, in IOAs with large numbers of members, there must be at least a substantial core group that provide such support. There also must be a continuing and varied program of activities that mutually engage member organizations. Such activities are essential to maintain

a continuity of communications and involvement as well as to meet the varied needs of members. Perhaps most important is a continuity of strong leadership that can guide the arrangement through difficulties as well as build on the energy of successes.

2. Strong leadership is essential to effective collaborative efforts. One aspect of such leadership involves multiple roles, functions, and skills. One role is that of linking agent. In this role the coordinator should have, or be able to quickly acquire, a thorough situational knowledge of the member organizations in order to understand the variety or diversity of needs and interests to be met in the IOA efforts.

Another role is system manager. In this role, the coordinator will be concerned with the ongoing operation of the IOA as a system, often monitoring fiscal matters, scheduling activities, coordinating and maintaining clear and regular communications, etc. Still another role is as a group facilitator in assisting members to clarify their common goals and objectives and in mediating the bargaining for resource exchanges among members. Finally, as Havelock stresses, the coordinator must also act as an IOA advocate with the energy and "clout" necessary to handle issues of faltering support as well as to handle the other roles.

The other aspect of strong leadership concerns the amount of time and back-up support required. On the basis of these six studies, it appears that a full-time or major-time coordinator position usually is necessary to carry out the numerous and varied responsibilities. In addition, adequate back-up support is often necessary in the form of additional part- or full-time IOA staff.

3. Mutual ownership of the collaborative effort is necessary to enhance its effectiveness and sustain member commitment. No one member organization or external party can be perceived to dominate the IOA or the other members. Members must perceive that they receive mutual rewards and benefits and also that they share in shaping the directions, operations, and outcomes. Mutual ownership can be established and maintained by assuring local autonomy of member organizations, actively engaging multiple levels of member organizations in the IOA, and actively engaging member organizations in all phases of IOA work, from planning and design to implementation of IOA activities and services.

4. Although the overall costs of collaboration are often moderate in light of the benefits, the costs should not be underestimated. The dollar costs for member organizations are often quite modest. However, the costs in terms of staff time can be much greater than expected, both for the coordinating staff and staff in member organizations. This may often be the case in the early stages of development until some regularized operation has been established. It will also probably be the case for IOAs that involve large, complex efforts among a moderate to larger number of members. Finally, it will also occur in improvement efforts where representatives of member organizations have the primary responsibility for carrying out IOA tasks, activities, and services. In these instances, representing the organization in the IOA is usually an additional responsibility of an already fulltime position. Serving as what often amounts to voluntary implementation staff for the IOA simply adds time and energy costs for the individual participants.

Implications for Complex Arrangements

These implications apply primarily to arrangements that have some sort of support from an organization external to IOA members. They are particularly directed to the external organizations such as federal and state education agencies and foundations.

1. Mandates for IOA participation should include congruent conditions for carrying out the requirements. Simply stated, sponsoring agencies should clearly state any priorities and expectations that will be placed on member organizations. For example, if a sponsoring agency expects an IOA to give priority to serving high need districts, that expectation should be made clear to member districts and to other agencies (e.g., REAs, IHEs) that are expected to participate. Similarly, if the IOA is expected to concentrate its activities on mandated improvements over other improvements it addresses, that fact should be clearly stated to all members. Finally, requirements for participation should be consistent for all member organizations in the sense that one type of organization (e.g., LEAs) should not be required to participate while other types (e.g., IHEs) are only encouraged to do so.

2. Sponsoring or mandating agencies should pay particular attention to the congruency of the roles, interests, resources and needs of different types of organizations. If one type of agency is expected to provide service to another type (e.g., LEAs), service provision should be a priority or at least an established orientation of the first organization. Moreover, the service priority or emphasis should be made clear from the outset.

3. Externally imposed structures should include flexible operating procedures to accommodate changes, particularly enlargements, in the goals, objectives, and activities of the IOA. As IOA members increase their mutual understandings, common goals, rewards and benefits they may find it appropriate to include activities or projects that go beyond the limits of the original planning, approval and funding cycles. The IOA structure should be able to accommodate such changes. At the very least, external sponsors should be willing to negotiate changes requested by members.

4. Sponsoring agencies should have realistic expectations about the costs and benefits of collaborative improvement efforts. This implication applies particularly to four areas:

a. Costs to sponsors and members. Collaborative arrangements are not "short cuts" to improvement. Although they can provide numerous resources and benefits at a fairly modest dollar cost, they require a substantial investment of time and energy from member organizations. Either the sponsoring agency or the member organizations or both must have enough slack resources in other areas to balance the cost of this investment.

b. A sub-unit, not the organization as a whole, usually will be the direct IOA participant. In general, it is rare that sub-units not directly involved in or responsible for the improvement effort will actively participate in the IOA. If broader organizational participation is expected, appropriate incentives and rewards must be provided.

c. IOA members are no more likely to actively seek or to use explicitly research-based information than are non-IOA organizations. Like their non-IOA counterparts, they will tend to seek and rely on information and practices that are validated primarily by experience: that is, rooted in craft or situational knowledge. Even those IOAs that progress to research-based information initiate their information exchange with craft and situational knowledge.

d. Collaborative arrangements tend to provide intermediate rather than ultimate benefits and outcomes related to practice improvement. Although there is considerable evidence of organizational and individual capacity building and perceived individual practice improvement, these improvements are not likely to be evident or reflected in changes in student performance attributable to IOA efforts. However, IOAs themselves can be demonstrated to be an improved strategy or practice for increasing access to resources and supporting (not implementing) improvement efforts. In general, it is still the IOA members who carry responsibility for enacting the improvement in their own organizations.

e. Continuation of a particular IOA, and hence its improvement effort, will depend in part on whether it serves a sensed real need of its members. In one sense, this indicates the opportunistic nature of members in a positive way. Where external resources are provided, IOA members will take advantage of the opportunity to pursue secondary as well as primary priorities. However, when those resources are reduced or eliminated, they are likely to use their own resources only for their own priority needs. Sponsoring agencies can enhance the likelihood for continuation of the collaborative effort by carefully targeting their own interests and resources to the priorities of potential members (especially LEAs) rather than expecting the reverse.

f. Given the current economic circumstance facing most educational organizations, it is not likely that even high priority IOAs will continue in the face of abrupt elimination of sizable external funds. Sponsoring agencies can increase the probability of long term collaboration in two ways. One is to include an initial agreement that external support will be on a "sliding scale" that provides greater external dollars for start up and development support then decreases to zero or a minimum amount as member support increases. The other is to phase out currently expected support over a period of two to three years. Both methods give member organizations lead time to develop other sources of support, to find funds from their own budgets, and/or to reasonably accommodate the level of IOA efforts to the available funds.

5. State education agencies tend to be the most appropriate external sponsor. Both logic and the study evidence suggest this. State agencies have the greatest responsibility for administering, and often creating, improvement efforts most consistently relevant to the needs of their states. They also are most familiar with the needs and resources of LEAs and should have the broadest overview of other educational organizations in the state. Thus, they are in the best position to establish congruent conditions for IOA efforts and to identify the most compatible types of organizations for different IOA efforts. Moreover, they tend to be the most stable source of support for LEAs and can provide a variety of meaningful incentives and rewards for IOA efforts and results.

Implications for Research and Development

1. Methodological Issues. Two methodological issues are raised directly and indirectly by the five case studies.

a. Simplification of case study methodology. The case studies consistently reflected the difficulties involved in studying complex social and organizational interaction at multiple levels and clearly tracing outcomes to the interactions. In particular, attention should be given to simplifying and reducing the number of variables that legitimately can be used. In addition, comparability of future studies could be enhanced and simplified by the development of quantifiable outcome measures that are also credible in reflecting the complexity and robustness of the arrangements.

b. Clarifying connections between IOA membership and ultimate practice improvements. The complexities of identifying improvements are complicated by the complexities of examining the arrangements themselves and by the IOAs' one step remove from the locus of improvement. Here again the need is for improved measures that can identify the existing connections between IOA efforts and practice improvements.

2. Substantive Issues

a. The impact of multiple ties. Synthesis findings identified or confirmed the existence of often numerous formal and informal ties among IOA members. In addition, they pointed to the importance of such ties, both past and present, in establishing a base for effective collaboration. However, because the studies all focused on a particular IOA or set of IOAs, there was little, if any, information about the impact of the multiple connections either on individual organizations, different types of organizations, or on the group of member organizations. Research on collaborative arrangements could usefully be expanded to identify the number and variety of ties (including those not directly related to improvement as defined in these studies), to examine the relative strength of the ties, and the cumulative impact of the ties in terms of organizational rewards, benefits, dysfunctions, and organizational interdependencies.

b. Hierarchies of KU needs and IOA development. The Havelock and TDR studies have indicated a hierarchical progression of IOA tasks and interaction. For example, Havelock suggests that "more complex and system-wide changes and solutions to problems probably have to build on prior activities of a simpler nature such as knowledge transfer through courses and workshops" (Havelock IV, p. 304). The TDR study extended this notion to suggest that there is also a progression of need and use for different types of knowledge. That is, at the outset of the arrangement situational knowledge will be the most needed and most useful. As these needs are met and the collaborative tasks and knowledge needs will be expanded to craft knowledge. Only when full and extensive collaboration is achieved can research knowledge be actively sought and used. Clarification of these progressions and how they might be enhanced is important to a more complete understanding of IOAs.

c. Research on collaboration between educational and non-educational organizations. With the exception of one case study, all the studies concentrated on IOAs involving only educational organizations. While such educational collaboratives appear to be predominant, there is evidence in the exploratory study that collaboration with other types of organizations can contribute substantially to various forms of school improvement. In addition, as public funding for education declines, there is growing interest by educational organizations in seeking support and collaboration from other organizations. Additional research on such collaboration is important to highlight the potential of these efforts and to identify the ways in which the arrangements and their outcomes may differ as a result of participation by organizations from different sectors.

d. Comparison of these findings with other areas of research and theory. With the completion of these studies and the synthesis, there is now a base of research on collaboration among educational organizations with which to compare and contrast the larger body of research on collaboration among other types of organizations. Although at first glance, the study results seem generally consistent with the larger literature (cf. Whetten, 1981), there are two apparent differences which may be important. One is the seemingly greater emphasis on a linear approach or sequence of development in the general literature (see also Whetten, 1981). The other is the potentially greater general emphasis on tightening loose coupling within and among IOA members.

Another useful comparison would be with informal networks and collaborations. The synthesis studies suggest that the degree of formality of the agreements themselves appears to have litle impact on the extent or utility of collaboration. If this is so, what advantages, if any, does formal collaboration offer (e.g., a clear point of initiation, greater visibility and commitment on the part of the organizations as opposed to individuals)?

II. INTRODUCTION

Purpose

Since the mid-1960s, formal interorganizational arrangements (IOAs) have become an important mechanism for facilitating knowledge utilization activities in education. In requiring, sponsoring, or establishing such arrangements, educational policymakers at all levels have acted on the assumption that collaboration will enhance knowledge utilization and school improvement efforts by extending or multiplying often limited resources and by reducing or avoiding unnecessary duplication of effort.

For example, federally sponsored Teacher Corps projects involved formal collaborative agreements between local school districts and institutions of higher education. In addition, many federally funded Teacher Centers involved a consortium of agencies such as school districts, colleges, and intermediate service agencies. In 19 states, the legislatures have mandated or permitted regional educational service agencies based on cooperative agreements by two or more local education agencies (Stephens, et al., 1979). And in at least two states (Florida and Texas) the legislatures have required public colleges and universities to collaborate with nearby school districts in forming Teacher Centers. At the local level, there are numerous examples of cooperative arrangements such as school study councils, individually guided education leagues, special education consortia, and occupational/vocational education consortia. Most of these arrangements involve only education agencies, but there also are many instances that include other public agencies (e.g., health and human service agencies in special education consortia) and private businesses and industry (e.g., in occupational/vocational education consortia).

Although no one knows just how many educational IOAs actually exist, it has been estimated that there are from 2,000 to 4,000 nationwide (Cates, 1981a). Yet, in spite of the apparent ubiquity and potential utility of such collaborative efforts, only recently has concerted attention been directed toward identifying and examining interorganizational arrangements *per se* as opposed to the programmatic efforts they support.

The purpose of this synthesis is to review the evidence from a selected set of recent investigations of formal collaborative arrangements among educational organizations, and to derive from the studies a set of conclusions and implications about the current understanding of this means of supporting school improvement efforts. Six studies are included in the synthesis:

A. Yin, R.K., M. Gwaltney, and J.A. Molitor. *Organizations Collaborating to Improve Educational Practice* (two volumes). Cambridge, MA: Abt Associates, April 1981.

B. Havelock, R.G., M. Huberman, N. Levinson, and P. Cox. *School-University Collaboration Supporting School Improvement* (four volumes). Washington, DC: Knowledge Transfer Institute, The American University, 1981 (Volumes I-III); 1982 (Volume IV).

C. TDR Associates. Case Studies of Three Urban University-School Collaboratives Mandated for the Improvement of Educational Practice (two volumes). Newton, MA: TDR Associates, 1981.

D. McKibbin, S. Successful Collaboration for School Improvement: A Case Study. San Francisco, CA: Far West Laboratory for Educational Research and Development, 1981.

E. Cates, C.S. Industry-Education Collaboration for School Improvement. San Francisco, CA: Far West Laboratory for Educational Research and Development, 1981.

F. Cates, C.S., P.D. Hood, and S. McKibbin. An Exploration of Interorganizational Arrangements that Support School Improvement. San Francisco, CA: Far West Laboratory for Educational Research and Development, 1981.

The central organizing question for the synthesis is:

- What can be learned from these studies about the nature, processes, interactions, and outcomes of collaborative arrangements that can facilitate the use of this mechanism to support school improvement?

In general, the synthesis is directed to three audiences: those who manage and administer improvement programs; those who make policy to facilitate educational improvement; and those engaged in research on educational dissemination.

Although the aim of the synthesis is to consolidate findings and implications of common interest to the three audiences, primary emphasis is placed on deriving practical implications for program managers and administrators (e.g., identifying or deriving exemplary models for conducting collaborative efforts; identifying key features for successful design and implementation of collaborative action).

The rationale for this special focus is based on two observations. First, in an era of declining resources for public education, managers and administrators of improvement services increasingly will need to rely on resources within their own organizations to support improvement efforts. Collaborative arrangements represent one approach to extending the limited resources within individual organizations. Second, in addition to the widespread use of collaboration identified in the Cates, Hood, and McKibbin (1981) exploratory study, follow-up contacts with numerous interview respondents in that study indicate a growing interest in improvement-oriented collaboration, especially on the part of program managers and administrators in intermediate service agencies and local education agencies.

Background of the Synthesis Studies

In the United States, public education is a local function, a state responsibility, and a concern of the federal government. Consequently, legislative, administrative, and judicial agencies, as well as educational agencies, professional associations, and public interest groups at all levels have an interest in the public schools. Among other things, this interest includes provision of general and categorical financial support; promulgation of laws, regulations, and orders; and provision of information, materials, technical assistance, and other forms of guidance or support. While the focus of much of this effort is on "maintenance" of schools, a small but important portion of this effort is concerned with "school improvement," that is, with efforts directed toward changing the structure, functions, curriculum content, staff capabilities, decision making participation, or other aspects of schools in ways that may make them more responsive, effective, efficient, or equitable.

Each of the six studies in this synthesis, as well as the synthesis itself, was supported by the Research and Educational Practice Unit of the National Institute of Education as part of a larger effort to develop a more comprehensive understanding of how various types of educational organizations relate to one another in accomplishing school improvement projects. The six studies form two sets. The first set includes the Yin, Havelock, and TDR studies which were sponsored under a single procurement for research on "interorganizational arrangements which have been established to deliver or exchange knowledge resources in the interest of improving educational practice in American elementary-secondary schools" (NIE, p. 1). Each research study includes three in-depth case studies and a cross-case analysis of arrangements which have a primary or substantial emphasis on providing one or more knowledge utilization services such as staff development, information retrieval, and technical assistance.

The Yin study examined arrangements among multiple school districts and Regional Education Agencies (REAs) that provided information retrieval, staff development, and technical assistance services. The Havelock study examined collaborative efforts among school districts and institutions of higher education (IHEs) that focused on staff development activities. The TDR study examined pairings between IHEs and sub-districts and considered a variety of knowledge utilization activities imbedded in collaborative substantive programs and projects such as basic reading skills, elementary math assistance. Although each research study differed in its particular approach and emphasis, all three addressed a common, required set of questions about descriptive issues and conceptual/interpretive/explanatory issues. Descriptive issues included: the basic elements and history of the collaboration; strategies used to facilitate collaboration; and contextual factors important for understanding the collaboration. The conceptual/interpretive/explanatory issues included: indicators of key concepts such as knowledge transfer; "success" of the arrangements as perceived by participants and judged by the investigators; strategies that worked well or badly for facilitating collaboration and knowledge exchange.

The second set of studies (McKibbin; Cates; Cates, Hood, and McKibbin) were conducted as part of the Educational Dissemination Studies Program

(EDSP) which conducts research designed to provide new knowledge about how improvement-oriented change occurs in schools and how policies and administrative and technical procedures in state, intermediate, and local education agencies support these changes. Although the EDSP studies were carried out independently, they were intended to complement the first set of studies. Consequently, they focus on the same general problem area and address many of the same issues and questions. However, they differ from the first set in several ways. All three are more descriptive than analytic. In addition, although all the arrangements examined in these studies support school improvement efforts, knowledge utilization services and activities are not necessarily the primary focus. In fact, the purpose of the exploratory study (Cates, Hood, and McKibbin) was to identify the number and variety of arrangements in a sizable geographic area and to describe the basic characteristics of the various types of arrangements identified.

In relation to the first set of case studies, the exploratory study can be seen as providing a "forest" in which the case study "trees" could be planted. Following this metaphor, the two EDSP single-case studies represent two additional varieties of trees or arrangements: one involving multiple school districts and a county office of education to develop proficiency assessment materials, tests, and item banks (McKibbin); the other involving multiple districts, a county office of education, and multiple businesses to increase linkages between business and education particularly related to youth transition from school to work.

In addition to their common sponsorship, and the similar issues addressed, the studies also share three other features which make them particularly useful for a synthesis of findings. First, they all were conducted within the same two-year time period between 1979 and 1981. Thus, they shared the same larger, national contextual environment influencing educational agencies and improvement programs.

Second, in general, they share a common definition of interorganizational arrangements. With some minor variations, an interorganizational arrangement (IOA)* is defined as a formal collaborative arrangement of some enduring significance between or among two or more permanent organizations. The main feature of the definition is the notion of organizations collaborating or "doing something together" such as pursuing common programmatic goals, establishing consensus over valued domains, or acquiring, exchanging, or allocating resources (Stern, 1979).

In addition, four essential characteristics are encompassed within the definition. First, the agreement itself is between or among the member organizations. Although individuals carry out the collaborative activities, they do so primarily as representatives of their respective organizations rather than as individual participants in a social network. Second, the formality of the arrangement is signified by an official, regularized agreement that denotes the purpose of the arrangement, the level of investment (e.g., dollar contributions, in-kind services)

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*Hereafter the following terms are used interchangeably: "interorganizational arrangement," "collaborative arrangement," "arrangement," and "IOA."

required of members, and the activities to be conducted. The level of formality of the agreement may range from a legally binding contract to a letter or memorandum of agreement that carries no legally binding weight. Third, the emphasis on collaboration--"doing something together"--distinguishes an IOA from other arrangements that are primarily purchase agreements for materials, supplies, or services. Fourth, the notion of "some enduring significance," although not bound by a specific time duration, distinguishes an IOA from collaborative efforts that are periodic, short-term, or one-time efforts (e.g., joint sponsorship of a single workshop or conference).

For these studies, the focus was further limited to IOAs that are for the purpose of exchange or delivery of knowledge and/or other resources in support of school improvement effort, primarily in the practice improvement areas of elementary and secondary instruction and curriculum.

As a third common feature, they share two basic models of IOAs consistent with this definition. A basic IOA model is depicted in Figure 1. In this model, the IOA members are a local education agency (LEA) and a research and development laboratory (R&DL)*, each participating as an organizational whole. The arrangement between the LEA and the R&D lab is indicated by the solid line between the two, labelled IOA. The line itself suggests the structure of the arrangement, and the arrows indicate the interaction within the arrangement. Connected to the LEA and the R&D lab by dotted lines are other organizations with which each interacts in its respective environment. In one instance, each of the IOA members interacts independently with the same "other organization."

Figure 2 illustrates a variation of the basic model in which sub-units of each organization are the primary participants in the arrangement. For the purposes of this example, a staff development technical assistance project of the R&D lab and the staff development unit of the LEA central office are the major organizational sub-units of the IOA, again represented by the solid line. Within the local education agency, the dotted lines indicate the indirect participation in the IOA by schools whose staffs may be the ultimate recipients of knowledge or other resources exchanged or delivered by the IOA. In both figures the primary unit of interest--the IOA--is represented by the solid line. The secondary unit of interest--features of participating organizations that influence the IOA--is more discernable in Figure 2: e.g., the relationship of the LEA staff development unit to other units in the central office and to the schools, its relative autonomy or interdependency, the degree of official sanction given to the IOA, its status relative to other units.

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* An R&D laboratory is used only as an example for the basic model. Although LEAs were members in almost all the IOAs in these six studies, a variety of other types of organizations collaborated with the LEAs (e.g., institutions of higher education, intermediate service agencies, and in a few instances non-educational organizations).

Figure 1. Basic IOA Model

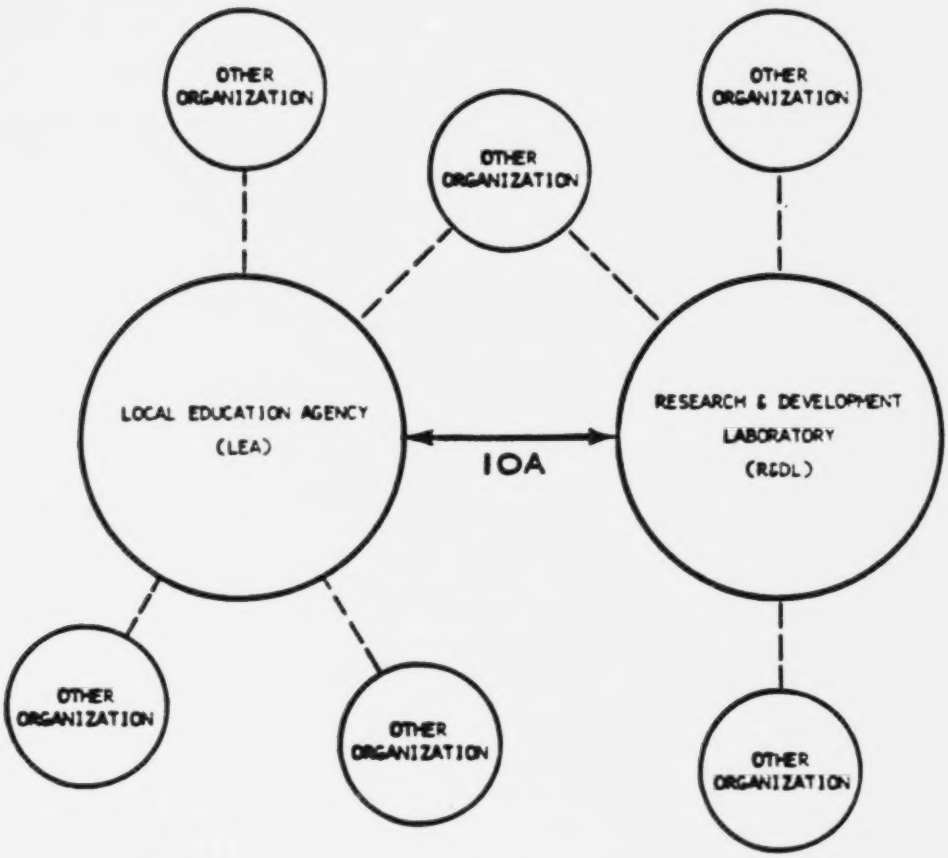
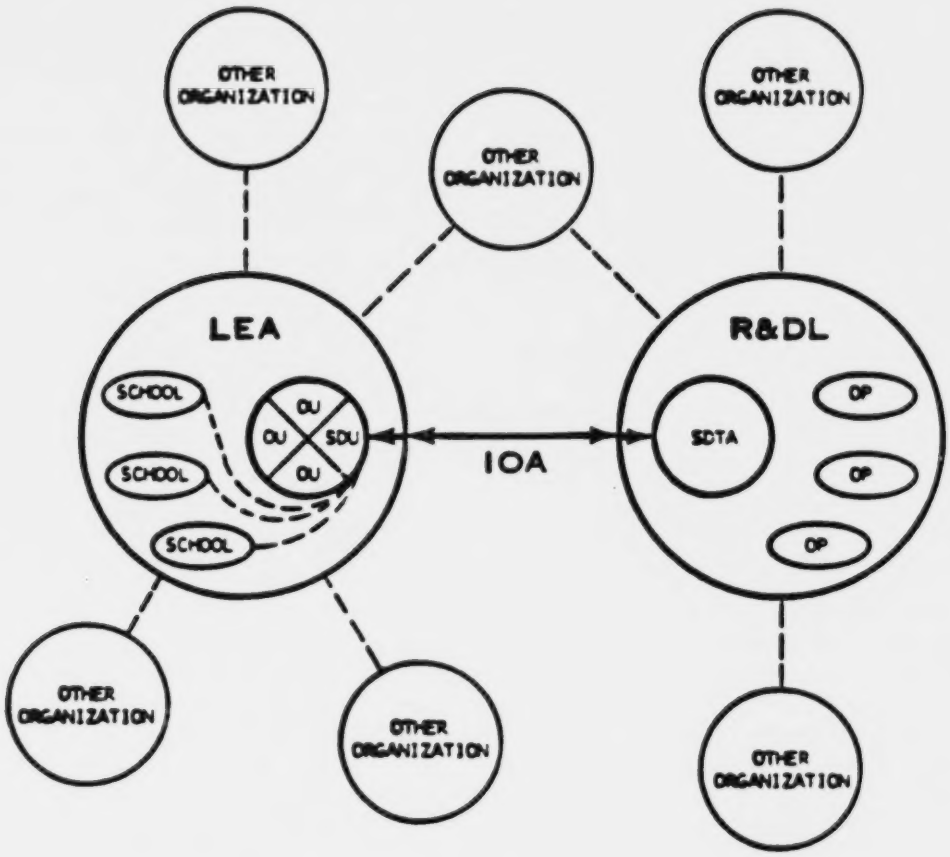


Figure 2. Basic Sub-Unit IOA Model



SDU = Staff Development Unit

OU = Other Units (e.g., business office, curriculum specialists, information resource center)

SDTA = Staff Development Technical Assistance

OP = Other Projects (e.g., curriculum development, organizational research)

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Procedures and Organization of the Synthesis

A brief synopsis of each study has been prepared in a common format and level of discourse to provide readers with essential facts of each study relevant to this synthesis. Each synopsis covers these topics:

1. The basic features and assumptions of the collaborative arrangements, including the major goal(s) and assumptions of the improvement efforts supported by arrangements.

2. The essential features of the methodology used to conduct the study.

3. The primary findings and interpretations of the study.

Synthesis findings and implications were derived from comparison and contrast of findings across the six studies, taking into account differences in arrangements and study methodologies. Three frameworks were used to guide the analysis of the six studies and to organize the cross-study synthesis section. The first framework was the classification scheme used by Cates, Hood, and McKibbin to categorize the 103 exploratory study IOAs according to the legal status or source of external influence (i.e., mandated, enabled, voluntary) of the IOA and of the improvement effort it supported. Each of the nine cells in the classification table represented a policy option for facilitating interorganizational arrangements to support school improvement. Classifying the IOAs in all six studies in this manner served three purposes: (1) to further test the scheme's applicability; (2) to fill gaps in the policy option cells; (3) to provide a consistent labelling of the IOAs for analysis of IOA descriptive characteristics and outcomes.

The second framework focuses on primarily descriptive characteristics of interorganizational arrangements. The framework includes five dimensions (history, context, structure, operations, outputs) and associated relational properties. In presenting the characteristics across the studies, comparisons and contrasts are drawn in relation to various IOA categories. The third framework concerns the predominant cross-study outcomes. Here the analysis and synthesis was organized around the six outcome categories used by Havelock: (1) power and status changes; (2) linkage changes; (3) knowledge transfer; (4) capacity building; (5) practice improvement; (6) institutionalization. These categories were found to be equally applicable to all the studies and focused particular attention on improvement and knowledge utilization issues.

Each synopsis has been reviewed and validated by a major author of the study to insure that the summarized study facts have been accurately presented and interpreted, and to provide the study authors an opportunity to clarify and update their reports in light of further analysis or insights. However, the synthesis author assumes full responsibility for arguments, interpretations, generalizations, and implications developed in the synthesis itself.

The synopses are presented in section three. Section four includes the cross-study synthesis and a summary of major synthesis findings. Implications and propositions for further study are presented in section five.

III. SYNOPSES OF THE SIX STUDIES

A. Organizations Collaborating to Improve Educational Practice

R.K. Yin
M.K. Gwaltney
J.A. Molitor

Descriptions of the IOAs

This study examined three interorganizational arrangements, each of which involved multiple local school districts and a regional unit of government (REA). The three IOAs were identified as exemplary cases according to the following criteria:

- The REA provided knowledge utilization (KU) service to two or more local school districts.
- The KU services included staff development, information retrieval and linker assistance.
- The KU services showed positive effects on at least two types of outcomes: goods and services (e.g., training or educational endeavors, shared facilities); intermediate utilization (e.g., the number of services offered, the number of service users).
- The knowledge provided was concerned with the "mainstream needs" of elementary and secondary schools.
- The services had been active for several years.
- The services were provided frequently enough or intensely enough that several REA staff were involved.

Wayne County Intermediate School District (Wayne ISD). This IOA links the Wayne ISD with the Michigan Department of Education, several area universities and 36 local school districts including Detroit. The total enrollment of the 36 districts is over 465,000 students. As part of this arrangement, the Wayne ISD has been providing KU services in both general and special education since 1962. Chief among the services are educational product development and in-service workshops. The ISD's large general budget of $54 million comes primarily from state or federal flow-through funds which are passed on to the LEAs for their own direct services. Within the ISD, KU services and supporting funds are integrated with other ISD services and funds.

The study closely examined one project or set of activities associated with each of the three KU service areas. The staff development service covered was the Interinstitutional Workshops begun in 1967. The overall objective for the workshops has been to implement a new product or practice in the school building with the particular topic selected by the participating school or district teams.

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The linker assistance service was Project VALUE initiated in 1974 under the name Project INFORM. The project's purpose is to help teachers and administrators in using validated products in the county's school districts.

Project ASK, the information retrieval service, was begun in 1967 as Project ASSIST. In this project, knowledge dissemination is primarily in response to telephone requests and takes the form of written materials such as copies of articles, educational product reprints, or bibliographies.

Northern Colorado Educational Board of Cooperative Services (NCEBOCS). Six local districts, enrolling 83,000 students in suburban and rural areas, participate with NCEBOCS in this voluntary arrangement. Although the state department of education maintains a voluntary and cooperative liaison with NCEBOCS, it provides little funding support or direct participation. The LEA members provide the main support and funding for knowledge utilization services. The specific programs and services are based on member needs and are developed only after members have made a financial commitment for the services. The $1.4 million budget at the time of the study represented a decline in funding and service utilization from the early 1970's when NCEBOCS received several major federal awards that provided funds for a larger staff and more services than member districts could support directly.

The NCEBOCS provides no direct instructional services, but it does provide some other direct services such as cooperative purchasing. However, the main effort involves KU services in a variety of areas such as basic skills and migrant education. The several types of KU services include staff development and inservice training workshops, information retrieval, linker assistance, and research and evaluation services.

The staff development focus for the study was on the staff development program begun in 1977. In addition to traditional workshops, the program has included a series of minicourses, taught by NCEBOCS staff, on topics related to practical teaching skills. Participating teachers can get course credits from Colorado State University.

The linker assistance focus was on the NCEBOCS NDN Facilitator Project which has been in place since 1974 and serves the entire state. Staff for this service provide phone and on-site assistance to teachers and administrators in defining needs, selecting solutions, and adopting/implementing products or programs. Project ACCESS has provided information retrieval services since 1970. Responses to telephone and in-person inquiries are based primarily on research reports, journal articles, and bibliographies.

EIC-South. Although the SEA did not formally recognize EIC-South as an eligible fiscal agent for state and federal funds until 1978, EIC-South began in 1968 under an ESEA Title III grant. Since that time it has provided KU services to 144 urban, suburban, and rural school districts in a six county region of New Jersey. Each district works with the EIC to identify the services it needs and pays no fee for the services it receives. The EIC also cooperates with the state department of education

in assisting the districts to implement state priorities such as legislation requiring remedial education programs in underperforming districts (Thorough and Efficient Programs). The EIC operates with a staff of 75 FTEs and a $3 million budget, a large portion of which comes from federal and state grants. The KU services cover a wide variety of topics from basic skills to nutrition education. Services of particular interest to administrators are also provided in areas such as teacher evaluation and state and federal legislation and regulation.

At EIC-South the KU services are organized by service areas rather than by projects or programs. Thus, the study examined the overall services provided in these three areas: Inservice Workshops, begun in 1969; Consultant Services, begun in 1968; and Information Retrieval Service, begun in 1967.

Features of the Study

Study Goals and Objectives. As the investigators summarize the general purpose, this study "is about how organizations collaborate to improve school practice." Their main rationale was to determine whether, in a few IOAs, they could find consistent patterns that would address two as yet unanswered key policy questions:

- How do collaborative arrangements operate to achieve knowledge utilization objectives, and
- Why do the arrangements that perform successfully operate as they do?

(Yin and Gwaltney, Vol. 1, p. 2)

The perspective the investigators used to address these questions was the service-based model of utilization which draws directly from the immediate functional goals of a KU effort rather than other potential goals (e.g., political goals such as a balance of power among IOA members). As the investigators summarized their views:

> Interorganizational arrangements formed to promote knowledge utilization may be depicted as having three types of outcomes: goods and services outcomes, utilization outcomes, and dysfunctional outcomes. None of these outcomes covers improvement in school or student performance--which is an outcome that would complete the conceptualization of the entire knowledge utilization process. These performance outcomes are usually determined by a wide array of factors, however, and are not limited to the effect of knowledge utilization services. For this reason, performance outcomes are inappropriate for assessing such services.
>
> The main goal of any knowledge utilization service should be to maximize the benefits in terms of goods and services and utilization, and to minimize the

> dysfunctional outcomes. For the purposes of improving these services in the future, policymakers need to know the conditions under which the services are most likely to achieve this goal.
>
> (Yin and Gwaltney, Vol. 1, p. 9)

Based on this view, the study's conceptual framework was built on the potential relationship between the three types of outcomes and an array of potential explanations for successful collaborative KU services. The three types of outcomes and examples of each are:

1. Direct goods and services outcomes.

   - Information in some physical form such as product catalogs or reports.
   - Information disseminated in face-to-face verbal communication, such as on-site assistance, related to a site's needs or potential problem solutions.
   - Similar information disseminated in non face-to-face communication such as telephone calls.
   - Training or educational efforts such as workshops.
   - Shared facilities such as computer systems and media centers.

2. Utilization outcomes.

   - Intermediate
     - the number of services offered
     - the number of users
   - Ultimate
     - initiation of a planning or assessment activity
     - a change in educational practice
     - confirmation that an existing practice need not be changed
     - changes in perceptions and attitudes not necessarily apparent in a changed practice

3. Dysfunctional outcomes

   - Added time needed to reach a decision because more people must be consulted
   - Reduced visibility or credit for particular individuals or agencies because users cannot precisely attribute knowledge or assistance
   - Confusion of responsibilities (e.g., the extent to which inquiries are made to the wrong party in the IOA)

- Costs associated with role ambivalence (e.g., high turnover of organizations participating in IOA, high turnover of linking agents due to conflicting or ambiguous work demands).

The investigators identified eight potential reasons or explanations for successful KU collaboration. Five of these are organization-based: that is, they have to do with the functional relationships among the organizations in the arrangement. Three are individual-based: that is, they have to do with the interpersonal functions within the arrangement. In each type or set of explanations, individual explanations involve potentially different conditions and are drawn from sources of previous research. The eight explanations and their major proponents are:

1. Organization-based explanations

   - Organizations successfully collaborate because they derive mutual exchanges from each other (e.g., see the "exchange" theory of Levine and White, 1961; and Van de Ven, 1976);

   - The organizations collaborate because they are able to increase their access to external funds or governance opportunities (e.g., Benson, 1975);

   - Organizations are given mandates to collaborate as in a legislated set of functions; under this condition, the creation of the necessary statutes and regulations would alone cause an arrangement to operate;

   - Organizations collaborate because they develop formal agreements between each other, specifying the responsibilities of each participating organization (Goodlad, 1975); and

   - Organizations collaborate because they have conflicting goals, and the collaboration allows the organizations to mediate their conflicts in a socially approved manner (e.g., Litwak and Hylton, 1962; Peterson, no date; and Hall et al., 1978).

2. Individual-based explanations.

   - The organizations collaborate because individuals derive mutual exchanges from each other, making specific job-related tasks easier to perform;

   - The organizations collaborate because individuals are able to achieve self-fulfillment goals, as in cases where individuals simply enjoy performing "matchmaking" or information-exchange activities; and

   - The organizations collaborate because individuals are able to advance their career development and employment opportunities.

(Yin and Gwaltney, Vol. 1, pp. 10, 12)

The final piece of the framework was the knowledge utilization services to be examined for outcomes and explanations. For this study KU service was defined as "activities in which educational information is transmitted from a source outside of an LEA to a teacher or administrator within the LEA." Three specific, commonly recognized services were selected as focal points:

- Staff development (e.g., workshops, inservice training)
- Linker assistance (e.g., assistance provided by someone external to the LEA)
- Information retrieval (e.g., responding to requests for information)

Within this framework, the particular purpose was to examine, through intensive case studies, three Regional Education Agencies (REAs) that were established by the collaboration of local education agencies (LEAs) and a state education agency (SEA) and have continued as a collaborative effort of the LEAs, the SEA, and the REA itself. The selection of REA arrangements was based on the rationale that, from a policy perspective, REAs are particularly important in the overall KU process for five reasons. Namely, an REA:

- May include, jurisdictionally, a state department and local school districts and therefore involves basic economies of scale;
- Is service oriented and thus more likely to excel in utilization activities (cf. a university research group);
- Has broad potential applicability in that every state could have such arrangements (as of 1978, about 39 of 50 states had such a system);
- Has political and bureaucratic legitimacy in that it is part of the educational system's inter-governmental structure (cf. a nonprofit organization that is not part of this structure); and
- Is basically supported by state or local funds, although it is usually eligible to be supported by federal funds as well.

(Yin and Gwaltney, Vol. 1, pp. 16-17)

A final point of rationale was that, because REAs are judged to be in a formative developmental stage, policy findings could positively influence the activities and operation of the REAs existing in many states as well as those that may emerge in the future.

Study Scope and Methodology. The study was conducted over an 18-month period using case studies as the primary research strategy. The particular

case study method was analogous to the direct replication design, which seeks to determine whether the same phenomenon can be found under predictable conditions in each case. The final step of this design is to develop a general explanation and cross-case synthesis where (or if) the phenomenon is found in all cases.

The three arrangements included in the study were considered exemplary in the sense that they were known to have operated extensive KU services over several years and had shown positive KU outcomes in their goods and services and utilization of services. The investigators chose the strategy of selecting extreme rather than representative cases "because the overall goal was to uncover the relationship between inter-organizational arrangements and knowledge utilization, and exemplary instances were the ones needed at the outset to document this relationship (Vol. 1, p. 30).

The same within-case design was used for each case study to collect evidence about four activities:

- A staff development service
- A linker assistance service
- An information retrieval service
- Any broader organizational issues that appeared to affect these three services.

The first three activities represented the basic ways in which information is transferred in the knowledge utilization process. The fourth was included because it provided a context for the first three that had potential relevance for explaining their operations and outcomes.

Data for each case study was collected and analyzed in two rounds of fieldwork. After the first round of data collection, preliminary case studies were written and explanations for each case were developed and compared. The second round was purposely designed to fill information gaps identified in the first round. The final cases were prepared only after the second round was complete so that insights apparent from only one case in the first round could be corroborated for the other cases during the second round and included in the final case.

A data collection guide organized the questions to be addressed in interviews, field observations and documents. The questions were based on existing KU research and the study's conceptual framework.

Four data collection methods were used. First, phone or mail contacts were made to each site (the REA) to solicit relevant materials about each REA's KU services. Second, the first round of field visits included on-site obsrvations, document collection and interviews with key IOA participants. At a minimum, the following participants were interviewed at each site:

- the REA director
- the REA staff member most directly responsible for KU services
- the project for each KU service to be examined
- other key REA staff involved in these services
- the SEA official most directly responsible for relating to the state's REAs
- other SEA officials with primary responsibility for federal programs that supported REA KU services (e.g., the NDN coordinator)
- LEA users of the three KU services--at least one user per service.

Third, investigators maintained phone contact with each site after the first round of visits to solicit supplementary information. In addition, major field informants reviewed the case study draft for their own site. Their comments were used to plan further data collection activities or to revise the draft.

Finally, in the second round of field visits, key people at each site were interviewed again, and supplemental interviews were conducted with key staff who were absent during the first field visit or with staff who had been cited as important since that time. Additional documents also were collected.

Data were analyzed in three steps. First, within each case, patterns of outcomes and effects for KU services were identified. Second, also within each case, explanations were built for why the KU services operated as they did. Previously developed explanations were tested and new explanations were developed where necessary. Third, when within-case analysis and explanation building were complete, the patterns of effects and explanations were compared across cases to develop the cross-case synthesis. The investigators stress that the three-step data analysis is critical to the direct replication design if the aggregate lessons are also to be appropriate to the single cases and for the features of individual cases to be preserved throughout the analysis and synthesis. For purposes of brevity and conciseness, the results of step two--Within-Case Explanations--are omitted. The Summary of Key Study Findings focuses on step one results--within-case patterns of effects. The Summary of Explanations of Effects focuses on cross-case patterns and explanations.

Key Study Findings

In general, the within-case pattern of effects confirmed the exemplary nature of the three REA arrangements, with mainly positive outcomes for goods and services and utilization and modest dysfunctional outcomes. However, the investigators reported some difficulty in comparing the success of the IOAs due to differences in the way the IOAs measured their outcomes. In addition, the IOAs showed varying degrees of success which the investigators attributed to the dysfunctional outcomes they

found. Thus, NCEBOCS appeared less successful than EIC-South or Wayne ISD because of its higher cost of collaboration. Nevertheless, the evidence for all these arrangements was sufficiently robust for the investigators to develop and test explanations both for the general outcomes and for the differences apparent in the NCEBOCS arrangement.

Goods and Services Outcomes. For the most part, these outcomes were reported in terms of descriptions of the types of goods and services found in each of the three KU service areas in each arrangement. As these outcomes are summarized in Table 1, they include the type of information given to users and the way information was provided. In these outcomes similarities among the three IOAs are readily apparent. For example, in staff development services for all three cases, workshop presentations were used to provide training information and materials. In addition, the purposes of the staff development programs were similar: namely, to implement new products or practices in school buildings. At the same time, the workshops were organized differently, ranging from the semester-long courses in the Wayne ISD Interinstitutional Workshops to special session workshops provided by NCEBOCS and EIC-South. In addition, the workshop topics and therefore the specific types of information varied both within and across cases since each workshop covered topics selected by participating school or district teams.

In the linker assistance services, information about and assistance in implementing educational products and processes was similarly provided, but there were differences in whether the information was presented primarily to individuals or teams and whether the particular products were validated (as with the NCEBOCS NDN products and some of the Wayne ISD products) or included information about products and programs from other sources. Only EIC-South's consultant services provided broader information on state and federal legal requirements for LEAs.

In the information retrieval services, information was provided primarily in the form of written materials gathered in response to phone or in-person requests. Although most of the information was focused on specific curriculum topics (e.g., bibliographies), Wayne ISD and EIC-South also provided information on classroom practices (e.g., sample report cards).

Utilization Outcomes. Intermediate utilization outcomes are summarized in Table 2. These outcomes include the number of workshops, linker consultations or information retrieval requests and the number of users of each type of KU service. Here, substantial differences are apparent among the three arrangements in all these KU services. For staff development services, the differences have to do with definitions used in the study and with the designs of the services themselves. For example, the research study, by definition, examined only one staff development program at Wayne ISD. By design, only 10-12 workshops were given, each usually enrolling 12 or fewer participants, also by design to involve only the key members of school or district implementation teams. In contrast, staff development programs at EIC-South had varied purposes and intended levels of participation.

Table 1. Goods and Services Outcomes for Selected Knowledge Utilization Services

Type of Service	Regional Education Agency/Goods and Services Outcomes		
	WAYNE	NCEBOCS	EIC-S
Staff Development	o Workshop presentations, organized into semester-long courses	o Workshop presentations, organized into mini-courses (six weeks) or special sessions	o Workshop presentations, organized into special sessions
	o Training information and materials	o Training information and materials	o Training information and materials
Linker Assistance	o Phone and on-site advice and assistance about school problems, presented to school teams	o Phone and on-site assistance about school problems, presented to individuals and to school teams	o Phone and on-site assistance about school problems, mainly presented to individuals
	o Catalogs of educational products, including nationally and locally developed products	o Mainly NDN products	o Educational products
Information Retrieval	o Answers to telephone and in-person inquiries, based on: articles, research reports, curriculum guides, bibliographies, local documents and forms	o Answers to telephone and in-person inquiries, based on: journal articles, research reports, and bibliographies	o Answers to telephone and in-person inquiries, based on: journal articles, research reports, program and process models, educational product materials and curriculum guides

(Yin and Gwaltney, p. 44)

Table 2. Intermediate Utilization Outcomes for Selected Knowledge Utilization Services

Type of Service	Regional Education Agency/Intermediate Utilization Outcomes					
	WAYNE		NCEBOCS		EIC-S	
	Number of Workshops, Consultations or Requests	Number of Users	Number of Workshops, Consultations or Requests	Number of Users	Number of Workshops, Consultations or Requests	Number of Users
Staff Development						
1978-79	19	143	4	111	299	39,000
1977-78	n.a.	109	n.a.	n.a.	473	16,274
Linker Assistance						
1978-79	2,957	n.a.	n.a.	n.a.	1,053	5,791
1977-78	n.a.	n.a.	n.a.	n.a.	853	15,461
Information Retrieval						
1978-79	1,470	1,470	206*	n.a.	9,055	9,055
1977-78	n.a.	n.a.	n.a.	n.a.	7,596	7,596

*1979-1980.
n.a. = not available.

(Yin and Gwaltney, p.49)

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However, the lower NCEBOCS levels reflected a quite different situation. The generally low utilization levels suggested that its exemplary reputation stemmed from an earlier period of high activity, stimulated by more and larger federal awards. More recently, service utilization has declined to the point that staff development and information retrieval services are part-time rather than full-time activities. The part-time effort in turn means that the service is used less because users have no one to contact.

For the most part, there was a general lack of systematic follow-up on ultimate utilization outcomes, i.e., the ways people actually use information provided by the REA. Notably absent in all three REAs were data on changes in attitudes or perceptions about the education process, and confirmation that no change was needed in an existing practice.

Dysfunctional Outcomes. The major dysfunctional outcomes--i.e., costs that result from collaboration--are shown in Table 3. For the staff development service at Wayne ISD, the dysfunction is associated with the purpose and design of the Interinstitutional Workshops. As previously indicated, the purpose is to help participating teams adopt a particular product or process in their own district or building. For this reason, the workshops themselves are held over a 16-week period during the fall so that the teams have the remainder of the school year to complete the implementation. Holding fall workshops means that participants and topics must be selected in the preceding spring. The dysfunction occurs if personnel or conditions in the LEAs change over the summer so that more time is needed in the fall to clarify the original topic for new participants or for the team to select a new topic and for the training information and materials to be reorganized to fit the new topic.

At EIC-South and NCEBOCS, other agencies were competing with the REAs to provide staff development services to the LEAs. At EIC-South competition came mainly from a federally-funded teacher center and its regional satellites. At NCEBOCS, competition came from other BOCS in the state and more importantly from LEAs themselves, with a number of larger districts opting to provide their own staff development programs rather than to pay for NCEBOCS services. Also at NCEBOCS, the previously noted parttime staffing of the staff development services (and the information retrieval services) resulted in a dual dysfunction, i.e., reduced service availability to users and reduced visibility of the REA.

Dysfunctional outcomes in linker assistance were noted at Wayne ISD and EIC-South. At Wayne, linkers were assigned to work as generalists with several LEAs in a geographic area. Often user requests were for information outside the assigned linker's area of expertise. Although users could be referred to other linkers with the appropriate expertise, the referral process often caused delayed response to the user or no response when the referral process broke down.

At EIC-South two different dysfunctional outcomes occurred. One has been the move to increased group rather than individual consultations as a result of reduced REA funding and staff availability. Although the group consultations usually occurred at the school site, consultants have

Table 3. Dysfunctional Outcomes for Selected Knowledge Utilization Services

Type of Service	Regional Education Agency/Dysfunctional Outcomes		
	WAYNE	NCEBOCS	EIC-S
Staff Development	o Workshops must be planned in preceding school year	o Part-time staff reduces availability of service to users o Service provision is less stable because LEAs have alternative sources from which to seek assistance	o Service provision is less stable because LEAs have alternative sources from which to seek assistance
Linker Assistance	o Linkers assigned to schools and cannot specialize on specific educational topics, leading to information loss or causing users to contact different linkers		o Resource constraints create need for some group rather than individual consultations o Ambiguity of state mandates leads to difficulties in responding to users' needs
Information Retrieval	o Facility far away from some LEAs, reducing in-person use	o Facility far away from some LEAs o Part-time staff reduces availability of service to users o Geographic distances create delays in responding to requests o Delay created because users must submit requests to LEA administrator for approval	o Facility far away from some LEAs, reducing in-person use

(Yin and Gwaltney, p. 54)

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been less able to assist individual teachers with specific classroom situations. In addition, some state requirements for both the REA and the LEAs have been unclear, so that consultants have had difficulty in responding to user needs in these areas.

In the area of information retrieval the three REAs shared the dysfunction of excessive distance between the REA and some LEAs, which reduced in-person use of REA services. Three other dysfunctional outcomes were apparent at NCEBOCS. Again, parttime staff availability caused response delays and reduced user requests and reduced REA visibility and credibility in this area. Also, the primary NCEBOCS knowledge base was located at the SEA rather than the REA. Relaying user requests from the REA to the SEA caused delays in response time of as much as ten working days. Finally, delays were caused by bureaucratic processes in some user organizations when requests for REA assistance had to be approved by the building principal or a district administrator.

Simple Versus Complex Arrangements. A major unanticipated finding that emerged was a distinction between simple and complex arrangements. Its importance is twofold. First, it reflects a qualitative difference in the nature of interorganizational relationships between the two types, which allows a clearer portrayal of IOAs themselves. Second, this clarification in turn provides an illuminating framework for identifying and explaining effective knowledge utilization arrangements.

Simple KU arrangements involve two basic functions:

- Development and maintenance of a knowledge base; and
- Application of information from the knowledge base in a practice-setting.

In principal, any number (or kinds) of organizations can participate in simple arrangements as long as some organizations provide the knowledge base and others apply the information in a practice setting. Three kinds of IOAs are possible under these conditions:

- Dual knowledge base (SEA & REA) with a single practice setting (LEAs)
- Single knowledge base (REA) and single practice setting (LEAs)
- Single knowledge base (SEA) and dual practice setting (REA & LEAs).

Examples of the first two alternatives were included in these three case studies.

Arrangements are complex when there is more than this type of functional relationship among the organizations. This includes a wider array of functions, which the investigators tentatively labelled "intergovernmental" (or third party) functions. Although several variations in complex relationships are possible, this study focuses only on the situation most relevant to the three cases, in which an SEA has a governance relationship to the other components:

- Implementing the governance rules that control REAs and LEAs, as set forth by state legislation;
- Providing general resources to REAs and LEAs;
- Administering direct services through the REAs and LEAs; and
- Issuing specific mandates that affect REAs and LEAs.

(Yin and Gwaltney, Vol. 1, p. 84)

Explanations of Effects. Table 4 summarizes the cross-case explanations of effects, showing the potential explanations proposed at the outset of the study and the applicable explanations for simple and complex arrangements. For simple arrangements, three of the potential organization-based explanations were confirmed (increased access to external resources, collaborative mandates, and mutual exchanges) and one new explanation (establishing KU networks) was derived from elements of each of the three original individual-based explanations. For complex arrangements, there was one confirmed potential application (mutual exchanges) and one new explanation derived from collaborative mandates. In addition, user-responsive orientation, a new explanation labelled as a service-specific condition, was found applicable to both simple and complex arrangements.

Service specific conditions. As a service specific condition, user responsive orientation was not exclusively related to interorganizational matters which were the focus of this research. However, evidence in each of the case studies showed that the foremost reason for the REAs' successful KU services was their uncommon responsiveness to user needs. This was the case for both simple and complex arrangements. The case studies documented often multiple activities associated with these six types of steps or functions geared to meeting user needs:

- Assessment of user needs (e.g., annual survey of teachers and administrators;
- User participation in KU service design (e.g., in project design and selection of workshop topics)
- Sensitivity to users in service operation (e.g., quick response time, courses located near users);
- User-oriented knowledge base (e.g., large variety of validated and promising practices in addition to extensive standard printed materials);
- User-oriented implementation assistance (e.g., multiple types of linkers and multiple areas covered);
- Careful follow-up on user satisfaction (e.g., follow-up on all field contacts, regular workshop evaluation).

Table 4. Summary of Explanations and Effects

POTENTIAL EXPLANATIONS	APPLICABLE EXPLANATIONS	
	Simple Arrangements	Complex Arrangements
	User * <------Responsive------> * Orientation	
Organization-based		
Increased access to external resources	X	
Mandates to collaborate	X	Congruent conditions for carrying out mandates
Mutual exchanges	X	X
Formal agreements		
Conflict mediation		
Individual-based		
Mutual exchanges		
Self-fulfillment goals	Establishing KU networks	
Career advancement		

As the investigators summarize:

> In the aggregate, the specific activities undertaken . . . helped to assure successful knowledge utilization. These conditions cannot be overlooked in explaining why knowledge utilization occurs, and the REAs appeared quite sensitive to their importance. To this extent, these user-oriented functions, and the steps that can be taken to fulfill each function, should serve as a basic reminder for the future.
>
> (Yin and Gwaltney, Vol. 1, p. 81)

Explanations for Simple Arrangements. Of the three organization-based explanations, the most important was that collaborating organizations gain access to increased external resources, usually funding or governance opportunities from SEAs and federal agencies. Funding patterns in both the overall budgets for each of the REAs and for the nine specific KU services support this explanation. For the two most productive REAs (Wayne ISD and EIC-South), state and federal funds are the source of revenue. Wayne ISD also derives substantial funding from its own direct taxing authority. In both cases, LEA contributions to the REAs' overall budgets are insignificant. In contrast, for the less exemplary IOA (NCEBOCS), member contributions to the general fund and for specific services account for over 40 percent of the total revenue.

The same pattern holds true across the nine KU services examined in the three case studies (three in each case). With only two exceptions (the Wayne ISD Workshops and NCEBOCS staff development services), most or all of the KU services are provided at no cost to the LEA users. Instead the services are supported from specific state or federal program funds.

A secondary explanation was that collaborating organizations establish mutual exchanges in which they gain specific benefits from each other (rather than from a third party). Similar examples occurred in the Wayne ISD's Interinstitutional Workshops and the NCEBOCS workshops. Each involved three collaborating organizations: the REA, the LEA members, and a local university. Individuals enrolled in the courses paid a fee, but could receive course credit from the university. The universities provided course credit and instructors, in return showing increased course enrollments. The REAs performed all the coordinating functions in return for increased credibility and additional contacts with practitioners.

Mandates to collaborate can provide another explanation. However, the basic structure of the mandate seems more important than merely the presence of a mandate. "All other things being equal, a strong mandate can strengthen a collaborative relationship. A weak mandate may undermine such a relationship" (p. 74).

In the case of both Wayne ISD and EIC-South, not only were the REAs established throughout the state by legislative mandate, they also are required to serve all the LEAs within their designated region, and receive substantial state support. In addition, the SEAs in these two cases play a central role in the IOA structure either through an annual

review of the REA budget or by relying on the REA to oversee other services required by the state. As a result, the REAs have multiple and continuing obligations to provide effective service, and the LEAs see the REA as a useful resource.

In contrast, in the NCEBOCS case state legislation permits, but does not require, LEAs in designated areas to form an REA if the LEAs see a need to do so. Moreover, supporting funds must come from the member LEAs and from competitive federal and state awards. In addition, the SEA seldom participates directly in the arrangement and exercises little or no oversight. Thus, the investigators assert, the LEAs sometimes perceive the REA as imposing rather than offering its services and do not see the REA as a prominent service provider.

Elements of all three individual-based explanations were incorporated into the final explanation for simple IOA. Namely, effective knowledge utilization is strongly supported by knowledge utilization networks at the interpersonal level. The existence of such networks, found in all three case studies, shows knowledge utilization as a continual, rather than discrete, process. Continual communication between REA and LEA staff members allows the organizations to "know" about one another through:

- Increased awareness of the capabilities and needs of each party;
- Individualized contacts between staff members, independent of the occasions when a specific problem needs to be solved;
- An appreciation of the organizational, political, and resource constraints that might exist more generally between two organizations;
- An ability on the part of users to learn about the information resources for each of the services and subsequently to use these resources and services more effectively; and
- Identification of potential future needs or capabilities.

(Yin and Gwaltney, Vol. 1, p. 76)

This general knowledge then provides a solid foundation for success of the discrete KU activities and services.

The networks in the three cases were built and maintained by several specific activities. For example, the whole range of each REA's activities is under constant review through monthly board meetings. In addition, REA staff members have numerous informal contacts with LEA staff through state and local professional organizations. An important career aspect also was evident. Where knowledge utilization was most effective, REA staff members often had previously worked in a member LEA and thus had come to the REA with some ready made contacts and an LEA perspective on service needs. Finally, effective KU was also associated with longevity of REA staff which provided consistent contacts within the network and the specific KU services.

Explanations for Complex Arrangements. Here the focus is still on knowledge utilization functions but is expanded to examine the role of third party organizations in enhancing or constraining KU relationships between the KU producers (REAs) and users (LEAs). Two companion explanations seem important.

First, there are mutual exchanges between the third-party organization and the REA. The exchange under a fairly simple service contract, in which the SEA provides funds for the REA to deliver a specific KU service (to the LEAs) that the SEA would be unable, or would find difficult, to deliver on its own (e.g., the NCEBOCS Migrant Resources Center). (Note that mutual exchanges appear to be a more important explanation for complex arrangements than for simple arrangements.)

The second and equally important explanation has to do with collaboration mandates: there should be congruent conditions for carrying out the mandate. The third party organization should be sure that, for each mandate involving IOA members, demands placed on the REA are congruent with demands placed on the LEAs and vice versa. This means that an SEA must (1) tell LEAs exactly what they must do and what help they can expect from an REA, and (2) tell REAs about exactly which LEAs they are to assist and what kind of assistance they are to provide.

Variations in two sets of mandate conditions at EIC-South pointed to this explanation. Under the 1975 "thorough and efficient" (T&E) legislation, the SEA requires REAs to assist LEAs in improving student performance and provides substantial T&E funds to the REAs for this purpose. However, the mandate is targeted primarily to the LEAs and focuses on the ultimate outcome of student performance. In addition, it is vaguely stated and does not specify any particular curriculum topic or innovation for improvement. Hence, LEAs did not consider REAs as a primary or immediate source of help and REAs found it difficult to prepare appropriate help without knowing what topic or innovation was to be used. Thus, there was no clear basis for immediate collaboration, and collaboration on this mandate has been slow to develop, to the dissatisfaction of the SEA and the confusion of the REA.

In contrast is the collaborative REA-LEA response to an SEA mandate for the evaluation of tenured teachers. Here, the mandate topic (teacher evaluation) and the LEA requirements (e.g., develop evaluation methods) are clear so that both parties can readily see the value and means of collaborating. As a result, EIC-South's services related to this mandate appear to have developed quickly and to have continued effectively. Similarly, the effectiveness of mandated services at Wayne ISD and NCEBOCS appears to be based on clear and congruent requirements.

B. School-University Collaboration Supporting School Improvement

R.L. Havelock
P.L. Cox
A.M. Huberman
N. Levinson

Description of IOAs Studied*

Eastern State University Site. The Eastern State University, through its approximately 14-year-old Office of Field Experiences (OFE), was involved in two levels of interorganizational arrangement. The first level centered on the formal interorganizational agreements between the Office of Field Experiences and five county-wide school districts in its region. Under the leadership of the Director of OFE, there were monthly meetings during the school year with representatives of teacher centers and other collaborative programs created in the agreements with the five counties, faculty liaison personnel, and other IOA staff. At these meetings and at special workshops also sponsored by OFE, participants shared ideas and problems with one another, reported on continuing projects, listened to invited speakers from the university and elsewhere, and handled organizational business in what informants judged to be a relaxed and supportive manner.

Within this larger collaboration among organizations, the three teacher centers in Hanburg County were examples of formal interorganizational arrangements at the second level. A full-time coordinator, jointly selected and paid by OFE and the county, headed each teacher center. In Cardon County the teacher center had a policy board which met twice yearly and consisted of the coordinator, representatives from the district (teachers, principals, and district staff) and from the university (faculty and OFE personnel). The center also had an operations committee (with principal and teacher representatives) which met with the coordinator monthly and focused on operational decisions. In contrast, Hanburg County teacher centers had no regular meetings involving district and university personnel, although each had its own advisory council with school representatives which met regularly with the coordinator.

At both levels, the interorganizational arrangement began with a focus on pre-service education: the coordination and supervision of student teachers at field sites and the provision to counties of a "window on the talent." Then, with declining enrollments both at the college of education level and the local school level, focus was turning toward in-service education in the teacher centers including the supply on-site of credit graduate courses, consultants, materials, professional memberships, and workshops.

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* All three descriptions are taken directly from the study itself: Havelock et al., School-University Collaboration Supporting School Improvement, Volume IV: Comparison and Synthesis of Three Cases, pp. vii-ix.

Eastern Private University Site. This study concerned a 40-year-old arrangement between a private university and an annually varying set of between ten and forty affluent suburban school districts within a 25-mile radius. The present configuration is actually about four years old, inheriting from the past (a) a core of about seven loyal district superintendents who value the connection, (b) a general obligation by the university to retain at least the image of providing service, and (c) a modest endowment fund which allows for maintenance of a small, part-time core staff.

Under the energetic and creative leadership of a newly appointed coordinator who held tenured professor rank, membership dramatically increased in 1977. The increase was due to a vigorous recruiting program by the coordinator and two graduate assistants; they promised and subsequently delivered on an impressive array of new workshop and conference offerings as well as some hands-on consulting help provided by graduate students who were paid a small stipend to serve as "fellows" to a particular district or school. Fellows also served as logistic and general support staff for the many workshops and conferences organized for teachers, staff developers, curriculum personnel, principals, and superintendents. Separate workshop series were designed to appeal to the concerns and interests of each group, but a chief concern of the coordinator and her fellows was the reorientation of the historic arrangement in order to do a better job of serving the lower ranks of the school district hierarchy.

A major espoused goal of the regenerated arrangement was to improve "networking" within the region. Thus, efforts were made to encourage continuing teacher-to-teacher and principal-to-principal exchanges to parallel the already established peer network among superintendents.

Midwestern State University Site. The Midwestern Teacher Center project operated in a large, relatively sparsely populated state. In 1976, a college dean at North Central University and his associates generated the concept of a federation of teacher centers spanning the state and loosely linked through a coordinating body comprising delegated teachers, administrators and college staff which would jointly manage each of the local teacher centers. The idea was to build a "statewide network" of professional development centers for teachers, with a home base at North Central University, one of the two major state institutions of higher education. The project subsequently received funding from a private foundation and opened with four teacher centers in 1977-78. By 1980, nine such centers were in operation in the state.

Two of these centers were studied intensively. The Three Rivers Teacher Center was connected to North Central University and to the surrounding school districts, whose teachers and administrators originally were somewhat skeptical of the project. After two rocky years, the center achieved a modicum of staff stability and put together a diverse and well-attended program. The center emphasized lateral exchanges of information and assistance between teachers, with a correspondingly lower profile for project or workshop leaders drawn from the university. As a result, collaboration between the university and local schools was

sporadic, although the center gradually became the conduit for in-service offerings, the dissemination of new practices and products, and some modest research. While support from area teachers grew, district administrators did not see the teacher center as a priority and hesitated to commit local funds, thereby compromising the transition of the enterprise to stable funding and leadership.

The Arcadia Teacher Center pre-dated the creation of the state-wide network by some four years. It grew from the teaching of an assistant professor at Arcadia State College to pre-service elementary teachers-in-training. In an attempt to simulate an enriched classroom environment, the instructor gradually accumulated a vast repository of materials. This resource bank was gradually used by in-service teachers enrolled in one of several special programs administered by Arcadia State. Upon joining the state-wide network, the Arcadia Teacher Center extended its inservice format and enlarged its already voluminous resource center. The staff also adopted a more self-conscious role as process helpers and resource finders for teachers trying to change their instructional practices. Gradually, other faculty members were integrated into the teacher center, thereby multiplying contacts with area teachers and across departmental lines at Arcadia State.

Features of the Studies of the IOAs

Study Goals. The overall purpose of this study was "to develop an understanding of the potential role of universities in school practice improvement." In particular, the goal was to examine the functional connections and knowledge transfer flows of collaborative school-university networks established to assist participating school districts in improving their instructional practices and problem-solving capacities. Four main questions guided the study:

- What impact have cooperative efforts had?
- Has improved school performance resulted from the collaboration?
- Has continuous contact with the world of educational practice benefited college-level instruction and research?
- Are some approaches to school university collaboration more productive than others?

Study Scope and Methodology. In an 18-month exploratory field study three school-university interorganizational arrangements were studied intensively. The three IOAs had four features in common:

- Each consisted of a college of education linked with a set of surrounding school districts.
- Each IOA had evolved from previous informal or weakly formal collaborative efforts among a core set of school districts and the college of education.

- Each IOA had been operating for at least four years and was assumed to be stable, if not completely institutionalized.

- None of the three IOAs depended on federal funding for its core operations.

The three arrangements also differed on five dimensions of interest:

- age of the arrangement (14, 40, and 4 years)

- location (eastern and midwestern states)

- type of university (large state university, private university, and small community college)

- interorganizational structure (lateral "federation," top-down "corporate")

- the placement of the linking or coordinating unit within the arrangement.

The study's overall framework for examining member interaction and resource exchanges within the IOAs was based on the integration of two conceptual approaches: interorganizational theory and knowledge transfer theory. Interorganizational theory provided an emphasis on the structure and interactions within the arrangements themselves, especially on the resource exchanges among members and on the resulting shifts in power and dependency. Knowledge transfer theory provided an emphasis on tracking the flows of knowledge and other resources between knowledge producers and knowledge users within the arrangments. In particular, it provided an emphasis on examining the formal linking roles (e.g., boundary-spanners) that connect the producers to the users and therefore facilitate or inhibit the knowledge transfer. With the integration of these two features, the investigators were able "to assess the degree to which different interorganizational arrangements can affect ongoing efforts to improve local practices by providing knowledge-based resources which are otherwise unavailable (Havelock et al., p. vi).

Examination of each arrangement was treated as a separate case study, but all were conducted under common methodological procedures that facilitated cross-case analysis. Within each case there were three levels of analysis: the arrangement as a whole; major sub-units of the arrangements (e.g., teacher centers, a writing consortium); a series of significant events in the IOA. At the latter level, each event was considered as a mini case study, referred to as a "serial", that covered origins-to-outcomes history of the event. The events themselves were either substantive (e.g., conducting a specific IOA project) or organizational (e.g., changes in IOA leadership).

Data were collected over a 12-month period in a series of site visits totaling 15-16 days per site. Most data were gathered in multiple, progressively focused interviews with key informants. Interviews also were conducted with non-users, critics of the IOAs, etc., who were

selected using theoretical sampling procedures. Back-up data was gathered from two sources. On-site observations covered routine operations and events as well as key meetings and important site activities. In addition, both site-generated documents and research generated documents were collected. Site-generated documents included: proposals, reports to funding agencies, minutes of meetings, evaluations, newsletters, etc. Researcher-generated documents included: weekly activity logs completed by key actors (e.g., the teacher coordinator); standardized reports of communications relationships between key actors and other IOA members (e.g., frequency, mode, substance); periodic written reports by an on-site consultant (at two sites).

Data analysis was based on an elaborate coding scheme derived from the principal research questions. For each case study, coded segments of interview transcripts and documents were analyzed for each category of research question. Each case study report provides a narrative of the arrangement and its sub-units and an analysis built around a standard matrix, figure, or table used across the three cases. Cross-case analysis was based on matrix and figure comparison and included the development of a meta-matrix as a data-reductive device to enhance cross site comparisons. In addition, a causal flow chart for each site was generated from a list of approximately 35 common variables (e.g., environmental turbulence, boundary permeability, teacher militancy). The flow charts were then compared to identify "streams" of variables that led to the principal outcomes.

As the investigators stress, this study demonstrates the conceptual and methodological complexity of assessing outcomes of interorganizational arrangements. First, in addition to the multiple units of IOA analysis (IOA, major projects within IOA, significant IOA events), there are at least three levels of outcome analysis: the arrangement level; the organization level; and the individual level. Within each level, there also are multiple sub-levels or groups at which outcomes can occur. Table 5 summarizes the levels of outcome analysis.

Table 5. Levels of Outcome Analysis

Arrangement and Organization Level	Individual Level
The Arrangment itself (IOA)	
As a whole	leader/coordinator
Sub-sites (e.g. teacher center or community college networks)	staff
University/College	
As a whole	administrators
Department	faculty members
Field Unit connecting to the IOA	student teachers/graduate students
School District	
As a whole	administrators
School Building	support staff
Community	teachers
	(students)

The investigators also point out that different types of outcomes can be expected at the organization and individual levels depending on the type of organization and the role of the individual. Further, for two of the three sites in this study there were two levels of analysis at the arrangement level: the statewide arrangement of teacher centers; the specific teacher center arrangements. Within and across cases, each of these levels were examined for outcomes in six areas: power and status changes; linkage changes; knowledge transfer; practice improvements; capacity changes; and institutionalization of the IOA.

Second, there are numerous descriptive characteristics that have potential for influencing one or more IOA outcomes. From the cross-site comparisons, the investigators identified six characteristics of particular importance: the structural properties per se, the degree of formalization; the scale of the IOA site and enterprise; the mix of IOA activities; the knowledge transferred; and the number and variety of innovative modes used for knowledge transfer.

Key Study Findings

Major Outcome Areas. The investigators judged all of the arrangements to be successful according to the six outcome areas summarized below.

1. Power and status changes. In general, the status of individual school personnel was enhanced by association with the university. In some instances at all these sites, this occurred by working toward graduate degrees. In others, enhancement came through working with well known university faculty--"rubbing shoulders with the 'greats'"--

especially at the Eastern Private site. At the Eastern state site, school participants were formally recognized as adjunct professors.

2. Linkage changes. At all levels at all sites, linkages were improved and increased in a variety of ways. Old linkages gained new strength and many new linkages were made as new organizations joined the arrangements. In particular, linkages among school districts and among schools were strengthened and increased. In almost all instances, the substance of the linkage was targeted toward improvement of schooling and university teaching. Finally, the analysis showed that strengthening of the linkages themselves led to all other forms of positive outcomes.

3. Knowledge transfer. At all sites, the investigators found the amount of knowledge transferred via the IOAs to be the most obvious and quantitatively impressive outcome. In addition, all sites and centers within sites were able to provide a very diverse range of classroom subject content (e.g., reading, writing, math, social studies, science, etc.). However, only the Eastern Private site provided knowledge of special interest to administrators (e.g., legal aspects, finance, evaluation). Finally, the most successful pattern of knowledge transfer involved "craft-validated" knowledge rather than scientific or research-based knowledge.

4. Practice improvements: These outcomes are less certain than in the other areas. Practice improvements were not studied or measured directly due to the study's special focus on the IOAs and limited access to classrooms and teachers. Nevertheless, practice improvements attributed to IOA participation were reported at all sites. At two sites (Eastern State and Midwestern State) teachers cited the teacher centers as a source of increased or enriched materials, resources, and/or problem solving assistance for their classroom activities. At the Eastern Private site which had no teacher centers, teachers suggested more gradual and individual outcomes in the form of "stockpiled" learnings from workshop sessions on which they drew as need or opportunity arose. In contrast, only at the Arcadia sub-site in the Midwestern State University IOA did college staff assert that IOA participation provided them "with a 'better understanding of the teacher's world,' and, thereby, with a stimulus to improve instruction and, in some cases, to reorient ongoing research."

5. Capacity changes. In all three case studies, school sites showed increased capacity to seek out more diverse and more remote external resources through closer association with the universities. In turn, the universities at two sites (Eastern State and Midwestern State) reported being better prepared to provide in-service training which was becoming an increasingly important source of funding at both sites. Although reports of individual capacity changes were most prominent at the Arcadia teacher center in the Midwestern State site, teachers in all three case studies commented on a sense of "rejuvenation" or "revitalization" as an outcome of their IOA participation.

6. Institutionalization. The investigators were also concerned with identifying changes that appeared to be durable and with assessing the likelihood that the IOA would continue for an extended period of

time, either on its own or as a solid part of the larger arrangement. For each site and sub-site, 23 separate variables were used to rate the degree of institutionalization (e.g., used on a regular or daily basis, outperforms or eliminates competing services, achieves stable funding, has survived departure of original key staff members). Based on these ratings, either the site-level arrangement or one of the sub-site arrangements within each case study were given good chances of survival. At the Eastern State site, the state-wide arrangement seemed strongest apparently due primarily to the separate teacher center arrangements tailored to each county. The Eastern private site arrangement was also given a good chance of survival with a combination of a 40-year history and recent revitalization and achievements. However, many competing interests among IOA members and a generally turbulent environment suggest that continuation of the present active leadership may be essential for full institutionalization. At the Midwestern State site, the Arcadia sub-site teacher center appeared more robust on most dimensions than either the other teacher center or the statewide arrangement.

Major Descriptive Characteristics. Cross-case findings on six major IOA characteristics can be summarized as follows.

1. Structural properties, per se. There was no one obviously superior IOA structure. In fact, the structure itself was less important than the way various features of the structure were implemented and the ways in which the arrangement allows or encourages behavioral patterns of linkage to develop within the structure.

2. Degree of formalization. Although all of the arrangements were, by definition, formal and involved written agreements among members, there was great variation in the elaborateness and extent of specificity within the agreements. The investigators found little difference in IOA outcomes or effectiveness attributable to the degree of formalization. However, they do suggest that it may be crucial in replicating an IOA model from one site to another by providing a clear formula for linking members and sharing resources where ties are historically weak or only newly emerging.

3. Scale of site and enterprise. There also was great variation in the size of the IOAs and their geographic locations. Although all IOAs studied were judged successful, the one most dramatically successful (Arcadia) was the site most rural, least populated, and most isolated from resources external to IOA members. The investigators suggest that the difference between success and dramatic success may be that at larger sites there is more of everything--activities, resources, conflicting purposes--to compete with the IOA efforts.

4. Activity mix. At all sites, training teachers was the predominant activity, carried out in workshops, courses and supervised experiences. At the two state sites course credits were always available for participants, while the Eastern Private arrangement stressed on-site consultation and working with other school and district personnel teachers. At the same time, diversity of objectives was reported as an aim of arrangements at all sites probably insuring that a greater

number of member representatives from both schools and universities would see personal benefits to their own participation.

5. The transfer of knowledge. One reason the investigators undertook this study was because they saw "a unique role of the university in society as the prime generator and disseminator of knowledge." Hence, they gave particular attention to the potential of IOAs as knowledge transfer mediators between the university and educational practitioners. What they found was considerable knowledge flow from a usually limited number of specific university faculty, but very little flow from school personnel to university faculty. In addition, with the remarkable exception of the original IOA at the Eastern Private site the arrangements generally did not serve very well in linking members to explicitly research-based/research-validated knowledge or to expert sources outside the area of the arrangement.

6. Innovative transfer modes. All sites made some efforts to employ innovative transfer modes in addition to the traditional modes common at all sites (workshops, coursework, supervised experience). Six types of innovative efforts were identified as noteworthy, though not always successful, for occurring at all or most sites:

- formal teacher-to-teacher exchanges
- materials development
- self-guided instruction and materials use
- observation and modeling
- individual problem solving
- group and system-level problem solving.

Explanations of Effects. Although the investigators are cautious about generalizing too broadly from only three cases, the microanalytic nature of the study allowed them to construct the following scenario which summarizes the causes and effects of IOA success.

> The formal arrangement is built on a foundation of informal links between school and university personnel, along with a positive history of collaboration. These antecedents make school personnel aware of the resource acquisition opportunities available at the college of education and the relative difficulty of getting comparable knowledge inputs elsewhere. Where such resource needs are high and the university is willing to strengthen its service/outreach effort, more intensive links are created. On the university side, there may also be a clear incentive to bring in funds through increased in-service activities. Goal congruence among member units, as well as agreement on the turf being covered by each party (domain consensus), are essential at this stage.
>
> Staff and leadership characteristics are important predictors of increased linkage: "homophily" (i.e., similar orientation reference group identification and background characteristic) of the linkage agent and

staff with both the university and school universes, energy and clout of the arrangement coordinator within the university, full-time and strong commitment to the arrangement and staff stability. Valuing craft knowledge and encouraging the professional aspirations of teachers are also associated with successful outcomes.

Fewer but longer-term projects appear to consolidate links between college and school staff. Diversification then increases the benefits perceived by school and college administrators, who then increase support, raise the priority of the arrangement, and commit matching resources. This leads in turn to a greater dependency by both parties on the arrangement and to another positive cycle of program extension and shared commitments. As the number of links grows between members at different levels of each participating unit, more practice-improvement and capacity-enhancing outcomes are reported by both sides. Finally, the greater the number of roles played by the boundary spanner (resource finder, solution giver, process helper), the more closely interwoven the school-university relationship becomes.

(Havelock, Executive Summary, p. 8-9)

C. Case Studies of Three Urban University-School Collaboratives Mandated for the Improvement of Educational Practice

TDR Associates, Inc.

Description of the IOAs

The Federal Court Mandate. In June 1974, Federal District Judge Arthur Garrity ordered the Boston (Massachusetts) Public Schools to begin large-scale desegregation of the city's schools which resulted in reorganization of the school system. The court order, known as the Boston Desegregation Plan was implemented in two phases. Phase I began in the 1974-75 school year with partial desegregation of the schools. Phase II, begun in the 1975 school year, included additional desegregation measures (e.g., extensive busing and a city-wide magnet school district), the development of parent and citizen groups that would participate in school related decision making, reorganization of the school system into eight decentralized community or sub-districts, and the creation of interorganizational arrangements that linked schools with universities, local businesses, cultural organizations. The arrangements, called pairings, were mandatory for the schools and were strongly encouraged for the other parties.

The court identified these overall and longterm goals for the school-university pairings:

> . . . (T)he pairings will create new links and strengthen the old ones between public school students and these institutions of higher education. They can provide a focus for the good will and creative talents and unique resources of these institutions. . . . (P)lanning between the public schools and the colleges and universities is being directed toward the formulation and implementation of programs to provide distinctive, nondiscriminatory educational instruction. . . . The significance of this pairing effort is a long-term commitment, a promise to the parents and students of Boston that these institutions, with their rich educational resources, are concerning themselves in a direct way with the quality of education in the public schools . . .
>
> (TDR, Vol. I, p. 6)

In addition, Judge Garrity posed two specific objectives for the pairings:

- to support, assist, and participate in the development of educational excellence within and among the public schools of Boston
- to share in the direction and development of curriculum and instruction under court-sanctioned contracts with the School Department . . . [which] contracts shall be unique to each institution and its matching school.

(TDR, Vol. I, p. 6)

Thus, although the pairings were part of the desegregation plan, their specific purpose was to support school improvement and educational excellence within individual schools rather than to carry out or participate directly in the actual desegregation activities. In addition, the particular design of each pairing, its composition and operation, was left up to the participants to decide according to their needs. So, for example, of the 26 pairings, some linked a single school and a single university; some linked several schools with one university; and some linked an entire sub-district with a university. All the pairings also included school community through Racial/Ethnic Parent Councils (for single and multiple school pairings) or a Community District Advisory Council (for district pairing).

In contrast, the court order specified an elaborate standard procedure for the development and approval of proposals for pairing projects. Under this procedure, proposal planning must involve principals, teachers, and community representatives as well as the official representatives of the paired organizations. Approval of the proposals could come from the State Board of Education only after review and recommendation by the district review panel, the School Committee, and the State Department of Education's Board of Equal Education Opportunity. The court provided greater flexibility regarding the substance of the proposals, specifying only four broad areas that should be included:

- staff development and training
- design of instructional materials and methods
- planning and organizational processes
- community relations

In a separate but related action, the state allocated funds to support pairing activities. The funds were provided under Chapter 636 of the state's Racial Imbalance Act of 1974. They were to be awarded to each organization within a pairing, thus assuring each pairing of at least initial funding resources for the new collaborative efforts.

Harris University--Community District A. This pairing involved three parties: a large, privately funded, urban university; an entire sub-district of the Boston Public Schools; and school parents from the four communities included in the sub-district. All but two of Harris University's 16 colleges are located within the District A boundaries. However, prior to the pairing, the university as an organization had little direct service orientation either to the surrounding community or to the larger urban area, although some faculty, especially in the college of education, had worked with schools in District A. As a result of the pairing, most organizational levels within the university have been involved (with varying degrees of commitment) in supplying faculty and student resources, as well as school and university facilities for pairing activities. At the outset of the pairing, the university created a Collaborative Office, staffed with a 2/3 time director, a full-time secretary and three part-time staff members. Office space and some logistics support is provided by the university. Staff salaries and other pairing costs (e.g., buying released time for faculty participation) are covered entirely by state funds from Chapter 636.

Community District A was created in 1975 as part of the reorganization required by the court. It covers four communities in the northwest portion of the city and in 1978-79 included 10 elementary schools, two middle schools, and one high school. The total student enrollment was 4,833, which represented a 30% decline from 1975. District A's Curriculum Coordinator administers the district's pairing activities from the central office. At the building level, the principal or headmaster serves as the official coordinator, although in some instances a teacher has become the unofficial building advocate or coordinator.

Community participation comes through two groups. One group is the Community District Advisory Council (CDAC), mandated by the court to serve as an advisory group to the Community District Superintendent. Leadership comes from two co-chairpersons (one black, one white) who are elected by the CDAC members and who serve for one year. CDAC members include elected representatives of parents and students, and court appointed representatives of community agencies. The university also has a representative. The other group involves parent participation in a Racial Ethnic Parents Council for each school in the district. Representatives to each school's council are elected through a parent caucus.

Early in the pairing, representatives of each party jointly identified nine objectives that would guide the development of project proposals and allocation of Chapter 636 funds for pairing activities:

- to improve reading and related communication skills of students
- to upgrade services for children and youth with special needs
- to improve the mathematic and scientific literacy of students
- to improve the motor skills, physical development, pleasure in movement of students
- to strengthen guidance counseling services for high school and middle school students; to expand and sharpen the awareness of alternative careers among high school students
- to improve health care services for students
- to improve the quality of bilingual teaching and learning in Spanish and Chinese
- within the housing project, to improve counseling and instructional support for students close to home and out of school
- to provide workshops for strengthening skills in community participation

(TDR, Vol. II, p. 42)

Project proposals usually have come from individual university faculty or district teachers. They are reviewed by a joint planning committee representing all three parties and submitted to CDAC for approval. Implementation of proposals approved by CDAC and by the required city and state approval groups is jointly managed by the collaborative offices in the university and the district office. Some projects are funded with Chapter 636 monies pooled from the separate 636 allocations to the district and university. Progress on these projects is reported regularly to CDAC and periodically to school and university personnel. An annual project evaluation is conducted by an external evaluator and the evaluation report is incorporated into planning for the next funding cycle. The Harris University-District A case study examined four projects funded primarily with Chapter 636 money:

- Movement/multicultural project
- Developmental reading project
- Reading support team project
- Student placement project

Dunfey University--Community District B. This pairing also involves three parties. Dunfey University is a very large privately-funded institution located in the heart of the city. Since its founding in 1898, it has been primarily a teaching university with a strong tradition and publicly evident commitment to community service. In recent years it has been increasing its emphasis on research productivity for both faculty and administrators in its nine colleges and professional schools. Dunfey's City Schools Collaborative Office (CSCO) was created in August 1975 under the general supervision of the Senior Vice President for Administrative Services. This placement made it possible for the fulltime Director of CSCO to draw on human and physical resources across all academic and nonacademic departments. Since the original court order was issued, two Dunfey Presidents have participated actively in planning and carrying out the pairing requirements, both serving as chairman of the President's Steering Committee.

District B serves five communities that, when combined, make the district unique in its cultural and socioeconomic heterogeneity. Included are: a predominantly black, low to middle income group; a Chinese American neighborhood that is densely populated and economically hard hit; a mainly white and Italian neighborhood; a neighborhood that is mainly white and wealthy; an area of mostly Latinos and blacks with a few white professionals. Within these areas there are also smaller groups of Native Americans, Armenians, Greeks, Irish, and Cape Verdians. From these groups, the district had a total enrollment of 5,243 students in the 1979 academic year.

The community involvement follows the previously described pattern of participation in the Community District Advisory Council and the Racial Ethnic Parents Council.

Collaboration in this pairing is carried out in a three-tiered framework that involves parallel administrative and personnel structures in the university and the district. At the first level, collaboration is headed, both actively and symbolically, by the cooperative relationship between the District Superintendent and the University CSCO Director. At the second level, the collaboration is between the Assistant to the University Coordinator and the district office staff and principals. Direct service delivery is at the third level and involves school faculty and university consultants. The four projects examined in this case study were:

- Student publications project (to increase school-home communications)
- Multicultural curriculum development project
- Basic reading skills program
- Henry Reid High School physical education program (to provide a p.e. program and facilities while the school facilities were under construction).

Massachusetts College-Community District C. This pairing links a state teacher training college with the largest of the newly created community districts and with community groups similar to those previously described. Massachusetts College was established in 1832 by the Boston City Council to train women teachers for the Boston schools. Until the 1970's teacher training remained the primary focus with many of its graduates, both in pre-service and graduate programs, returning to teach in the city schools. As a result, the college has a long history of faculty and organizational involvement in the public schools.

Not long before the pairing the college had begun to redefine and enlarge its focus as a result of the decline in both general enrollments and education majors. It had begun to redefine itself as a "city college" with a special mission to serve urban minorities, disadvantaged students, and working people. As part of this Urban outreach, it had expanded its full time evening program, and initiated college readiness programs in an Urban Learning Center, GED courses, and a pre-college remedial program. Thus, the pairing provided an opportunity for Massachusetts College to reinforce its new identity with additional community linkages and to usefully employ tenured, underutilized education faculty in programs for which they were well trained.

Coordination of pairing activities within the college became the responsibility of the Director of Program Development and Research (the College Coordinator). The coordinator has had complete control over the college's pairing participation and has supervised day-to-day operations of the overall pairing arrangement, delegating some tasks to one or two assistants. The formal, ongoing involvement of other departments has been very limited, with faculty participating as individual rather than as department representatives.

Community District C is unique in two ways. With a 1979-80 total enrollment of over 10,000 students, it is the larger of the new sub-districts. In addition, 21 of its 22 schools are located in a single neighborhood. The neighborhood, the largest in the city, is loosely knit and composed of many smaller neighborhoods and districts with great differences in income level, racial composition, and age of residents. Also racial tension and conflict have increased over the past 15 years as the population in many areas has shifted from predominantly white to predominantly black.

Since the almost simultaneous creation of the district and the pairing, there has been high turnover in both district administrative staff and teaching faculty. Partly because of this and partly because of the initial planning and pairing structure, teachers are usually project participants rather than project initiators. Most projects were based on an early summary of teacher needs and preferences for pairing activities. In this context, the District Superintendent has had a dominant influencing in the pairing, working closely with the College Coordinator in policy areas and with principals, headmasters and project directors in implementing projects. Under a streamlined proposal process, a proposal abstract must be submitted jointly by a district person and a college person, either of whom can be the initiator. The proposal can be directed to any of 18 areas identified by the District Superintendent and the College Coordinator for pairing activities but must include plans for interim and final evaluation.

The pairing's primary focus has been on basic skills with most projects concentrating on staff development and curriculum development. However, the college has provided some direct student services such as college students serving as classroom assistants. It also has shared its athletic facilities and has assisted district personnel with grant writing. With this assistance the district received federal awards for a Teacher Corps, a Teacher Center, and an NSF grant for pre-college teacher training programs in science. The four projects examined in this case study are:

- Elementary math assistance project
- Secondary math assistance project
- Environmental studies project
- Student assistance provided by the college.

Features of the Study

Study Goals and Objectives. The primary purpose of this study was to investigate the knowledge exchange in three of the 26 Boston school-university pairings mandated by a federal court order. In particular, the study was designed to examine these aspects of knowledge exchange in the collaborative arrangements:

- the types of knowledge exchanged and the effect of each type on the collaboration
- the organizational structures for collaboration that affected the process of knowledge exchange
- the key roles and relationships within the pairings.

The major conceptual framework related to knowledge use was based on two sources of knowledge use, as described below:

- Research Based Knowledge - information on education or utilization processes obtained directly or indirectly (from books, reputable experts, etc.) from disciplined, scientific inquiry. Its assertions concerning education practice and knowledge processes are based on "objective" evidence.
- Experience Based Knowledge - information on education or utilization processes derived primarily from practice, which we have further divided into two sub-categories:
  - Craft Based Knowledge - information or assertions derived primarily from the accumulated and articulated experience of practitioners, and relying heavily on the attributed common sense and trustworthiness of the person(s) asserting it.
  - Situational Knowledge - information or assertions about educational practice and the transfer of knowledge which comes from familiarity with a concrete situation and consists of statements about the situation; it is not proposed as generalizable beyond that setting (in contrast to craft knowledge, which is offered as generalizable).

(TDR, Vol. I, p. 57)

Scope and Methodology. This 18-month research effort involved intensive fieldwork by participant observers to produce highly detailed case studies of three interorganizational arrangements, or pairings, each involving a college or university, a community sub-district of the Boston Public Schools, and a group of parent and community representatives. The three pairings included in the study were selected as arrangements that shared some basic similarities as well as some important differences. The three pairings had these similarities:

- Each arrangement was part of the common pairing program mandated under federal court desegregation order.
- Each pairing was similar in duration and in the scope of activities conducted.

- All three pairings operated in the common environment of the city and school system.
- All three were subject to the same change processes involved in desegregation and school system reorganization (e.g., busing, pupil and staff reassignments).
- Each college or university had an education training program staffed with specialists, at least some of whom had worked with schools.
- Each was paired with a separated and specific multi-school sub-district of the school system.
- All three pairings depended on some pool of state funds.
- Each sub-district was newly created under the mandated system reorganization.
- Each sub-district had a new District Superintendent assigned as part of the reorganization.
- Each sub-district was about the same size and included a magnet school or program, secondary, middle and elementary schools.

(TDR, Vol. II, p. 14)

The major differences among the pairings were:

- the internal organization or shaping of the university/college pairing effect;
- the history of each university/college's relation with local schools;
- the backgrounds and orientation of personnel in each pairing.

(TDR, Vol. II, p. 14)

The overall research effort was purposely designed to involve insiders and personnel familiar with the pairings at all levels of the investigation. For example, the principal investigator had participated in some of the early pairing activities as well as having consulted with one of the sub-districts before the official pairings began. Each of the three field investigators/case study writers was affiliated with the university or college in the pairing and either was familiar with pairing staff and activities or had previously participated in some aspect of the pairing. In addition, other research team members and the two consultant advisors either were familiar with pairing activities or had previous experience in the activities.

Two biases were recognized as the possible result of using insiders: conceptual and ideological biases, and the possible tendency to overlook or omit reporting features that appeared "obvious." Several measures were

taken to clarify or reduce such biases. None of the research team was involved in pairing activities while participating in the study, and none had participated previously in the particular projects examined. Consultant advisors met regularly with case writers to cross check data being gathered and to probe for data possibly overlooked.

The investigators summarized the general case study approach as follows:

> The hypotheses were not a salient feature for the [case] investigators. They were asked to immerse themselves in the phenomena and let the 'informants set the framework' in the course of the interview about what they saw and how they acted in the situation. The intention was to ensure 'triangulation' from the perspectives of the participants from the university, schools, and, when relevant, the parents and community persons. At the same time, there was no requirement of three perspectives; the write-ups could describe the project and activities from one common framework with due notice to when there were differences in perspective.
>
> (TDR, Vol. II, p. 11)

During each round of interviews and data collection, case writers met with other research staff to review the data and identify additional areas to be probed in future. First drafts were written towards the end of the interviews to provide an overall picture of each pairing that could be used as the basis for initial testing of the hypotheses and suggesting alternative explanations. The final case study of each pairing included detailed write-ups of four projects related to four basic areas: equity, basic skills, physical education or experiential learning, and collaborative communications. Each also described all other pairing activities to provide the overall context for the case. Each case was analyzed with particular attention to these previously indicated aspects of knowledge exchange: types of knowledge exchanged and their effect on collaboration; organizational structures that affected the knowledge exchange process; the key roles and relationships in each pairing.

Key Study Findings and Conclusions

Repeatedly, in the cross-case analysis and in the three pairing case studies, the investigators stress the complexities involved in establishing and carrying out these IOAs and in sorting out the effects and causes of the outcomes. The essential purpose of the Federal Court mandate was to bring about the desegregation of the Boston Public Schools. As part of the desegregation plan, the mandate also required a massive reorganization of the school system itself. The three pairings, along with 23 others, were established as part of a large and complex network of other structures intended to promote the involvement of many organizations and agencies that formed a "superstructure" within which the pairings operated and which included federal, city, and state agencies, both educational and non-educational (e.g., the Court, the State and Boston Chapter 636

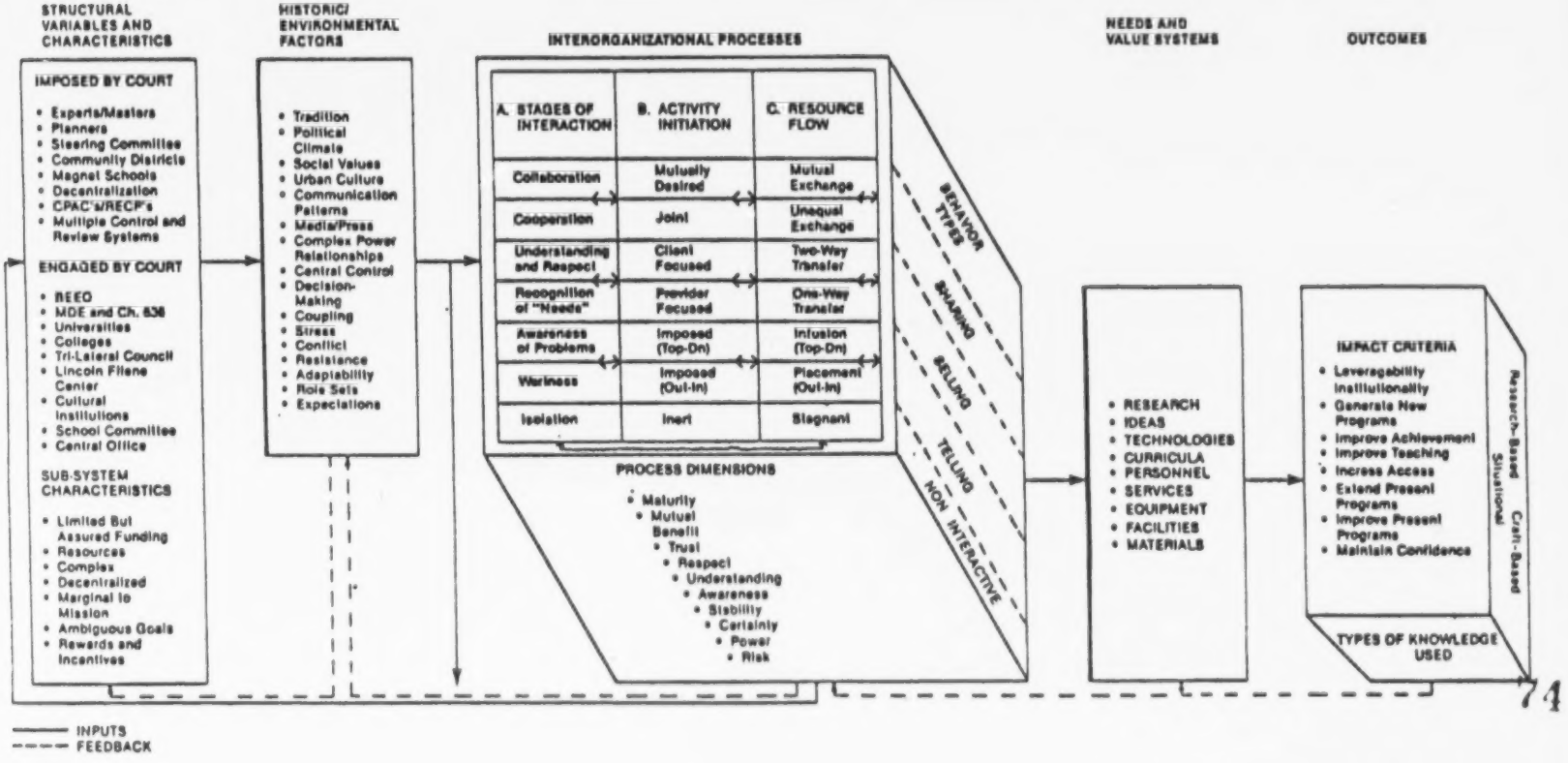
Funding Administration, the Massachusetts Department of Education, the Boston Mayor's Office, and the Boston School Committee). In this context, the Pairings were charged with a global mandate "to jointly plan and execute projects and activities which they felt were needed to upgrade the quality of education and enhance equity in Boston." As the investigators summarized it:

> Armed with this global mandate, few procedural guidelines, nothing said explicitly about "knowledge use", and some prior piece-meal collaboration, the Pairing participants worked their way over a five-year period. They moved from stages of mutual suspicion and wariness to some cooperative planning, but mostly bargaining and trading. . . .
>
> In the Pairings many University/College, school, and community people came together around primarily discrete, small-scale projects. With a combination of paid and contributed time, attention was focused primarily on school-defined needs (listed in order of historical occurence):
>
> - expanded access to facilities and materials;
> - added personnel for direct services to students;
> - improved practices such as in curriculum and instruction; and
> - (least occurring) enhancing the school's self-improvement capabilities.
>
> (TDR, Vol. I, pp. 2, 5-6)

In order to describe and explain the outcomes and effects of Pairings the investigators developed the "Conceptual Model of Inter-Organizational Arrangements for Knowledge Utilization in Urban Settings" shown in Figure 3. The model uses four normative scales to characterize the interorganizational processes involved in the pairings. These scales are shown in the middle of the figure as Interorganizational Behavior Types progressing upward from Non-interactive to Sharing. The characteristics included at each level are shown to the left of the behavior types in terms of stages of interaction, activity initiation, and knowledge flow.

To the left of the IOA processes are two sets of variables/characteristics which feed into the IOA processes (as shown by the arrows moving from left to right) and also can be influenced by the IOA processes (as shown by the lines moving along the bottom of the model from the IOA processes toward the left). The first set of characteristics involve the structure of the IOA: the external influence on its initiation (in this case, imposed by the court); other organizational and administrative structures in the environment that impinge on the IOA; the characteristics of the IOA as a sub-system; and the system of incentives for organizational participation in the IOA. The second set of characteristics are the

Figure 3. Conceptual Model of Inter-organizational Arrangements for Knowledge Utilization in Urban Settings



(TDR, Vol. I, 1981, p. 36)

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historic/environmental filters through which each participating organization views the other organizational participants and its own role in the IOA. Note that the historical characteristics are "fixed and immutable" so that initial IOA processes can begin at only one level. However, initiation can begin at any of the four levels and can move up the scale as part of the IOA process.

To the right of IOA processes are two sets of knowledge utilization characteristics: the hierarchy of needs and resources of IOA members; and knowledge use outcomes in terms of three types of knowledge--situation-based, craft-based, and research-based. Here the arrow connects the processes to the likely participant needs/resources and KU outcomes for IOAs. Both the level of participant needs/resources and the level of KU outcomes can move up as the IOA moves up the process scale. Here also changes in both needs/ resources and outcomes can influence the IOA processes themselves. Using this model, the investigators organized their key findings and conclusions around five topics: knowledge flow and use for school improvement; structure; history and environment; interorganizational processes; and hierarchy of needs and resources.

Knowledge Flow and Use for School Improvement. One major conclusion of the study was that the three Pairings examined had more-or-less stabilized at the mid-range of the model, primarily Selling. The following seven cross-case findings supported this conclusion:

- mode of knowledge flow/use--predominantly through verbal, face-to-face interaction;
- types of knowledge flow/use--situational knowledge came first (47-53%), craft knowledge second (36-41%), research knowledge third (5-16%);
- role related knowledge flow--school staff contributed mostly situational then craft knowledge (experience-based), with IHE staff contributing mostly craft then research knowledge;
- direction of knowledge flow/use--in the most research-oriented IHE, more often a bilateral exchange between IHE staff and school participants and in the more service oriented IHE, more often a unilateral flow from IHE to schools;
- content of knowledge (e.g., basic skills) did not appear to influence any aspect of knowledge flow or use;
- level of need did affect knowledge flow/use with experience-based knowledge (situation and craft) being used in relation to materials and facilities access, and added personnel for direct services to students, and both experience-based and research-based knowledge being used in relation to improved practices and enhancing the school's self-improvement capacities;

- setting also affected knowledge flow/use with research-based knowledge being more acceptable to school staff if presented by IHE staff at the IHE setting (e.g., in workshops), and experience-based knowledge being expected (and used) by school staff at the school site.

Given the complexities of the setting and the mandate and the ambiguous expectations for the Pairings, the investigators considered it a major accomplishment that the Pairings had steadily progressed from limited or non-interaction to the mid-range of the IOA process scale. However, based on the conceptual model they emphasized that further progress toward the upper levels of sharing and knowledge flow and use would require some basic changes in the entire pairing apparatus. In presenting their conclusions about the various aspects of the pairings (e.g., structure), they also identified some of the changes needed, which are included in the following summary.

Structure. The major effect of the pairing structure was to limit the growth or progress of pairing. The investigators found that after five years of operation, the pairing structure remained essentially unchanged. This occurred in part because the Court and the original planners had made no provision to monitor and adjust the structures as the Pairings developed and in part because the various groups of Pairing participants "simply assumed that since they were enmeshed in a Court-order, that they were forever set in stone," and that they, the Pairing participants, were powerless to make any structural changes themselves or to influence those in power to make adjustments based on changes in circumstances and relationships. As a result, the Pairings operated under a "rule of the least common denominator" with the participants consistently adjusting their actions downwards to fit the structural limitations even though their vision of what was possible and mutually useful was enlarging. For example, the fixed, one-year cycle for project planning, approval, and funding meant that Pairing projects were limited to short-term, terminal efforts that fit the limits of the cycle. The Pairings continued to operate with these kinds of projects (which tended to fall in the mid-range limits) even though they had begun to perceive the need for and utility of at least some longer term efforts that could build cumulative effects and broaden the scope of their efforts and accomplishments.

Other structure-related conclusions were:

- the key roles for setting direction and exerting influence in the Pairings toward higher-level functioning are powerful advocates and linkers, and these roles can be enacted by people in a variety of staff and administrative positions in the Pairings and their superstructures;

- the most critical positions in the Pairings for facilitating cooperative (and eventually collaborative) planning and action are university/college and school coordinators;

- although some short-term projects are important to satisfy the short-term needs of school staff and parent/citizen groups, short-term projects should be designed as part of long-termed programs for cumulative effect and higher-order functioning;

- overall, parent/community group involvement in the Boston Pairings was primarily ceremonial, despite many efforts to the contrary;

- a characteristic fragmentation ("loose coupling" of subunits in schools and Universities/Colleges requires frequent and multiple communications regarding Pairing projects and activities for their spread (leveraging) across subunits;

- a predominant type and focus of the University/College (i.e., research, teaching, service) affects the emphases of the Pairing project and activities, and hence the nature and extent of knowledge flow/use for school improvement; and

- inadequate and inappropriate incentives (including money) for most participants have been and continue to be a major barrier to project and activity involvement, and attention to knowledge flow/use.

(TDR, Vol. I, p. 162)

History and Environment. The initial attitudes of the Pairing partners were primarily negative, conditioned strongly by the history of their prior relationships (or lack of relationships) and by the new turbulent environment in which they were expected to work together (i.e., desegregation, a reorganized school system, and the pairings themselves). For example, many IHE staff had clearly negative stereotypes about the schools and school staffs and were sometimes condescending in their initial Pairing interactions. At the same time, school staff often resented the Pairings as well as the larger desegregation plan, which they saw as insult and an assumption of incompetence and inertia on their part. These historical and environmental characteristics were simply facts of life which could not be changed. Moreover, the study found that little conscious attention was given to these factors, either by the pairing designers or by the participants. From a cross-case analysis of these characteristics or factors, the investigators developed the following conclusions:

- in the initial stages (1-2 years) of mandated inter-organizational arrangements which involve such major changes, participants will devote considerable time and energy vying for power and influence in an ambiguous environment, and will tend to engage in projects and activities with minimal risk (e.g., access to facilities and materials);

- parental/community support for the Pairings will be very difficult to obtain when the Pairings are an integral part of an emotionally charged, court-ordered desegregation;

- the colleges/universities, especially, must avoid *taking too much credit for the Pairings' achievement*, as this will further antagonize school and community participants;

- within a context of desegregation, projects and activities which gain the most public support are the "basics" (e.g., reading, mathematics), and the least popular (which were avoided in the Pairings) would involve direct race relations work; and

- collaborative/cooperative involvement between the paired colleges/universities and schools prior to Pairings accelerates and supports the Pairing's operations and accomplishments.

(TDR, Vol. I, p. 164)

Interorganizational Processes. Here the patterns identified in the cross-case analysis are closely related to those previously summarized under knowledge flow and use for school improvement. They were closely consistent across the three cases, a fact explained in the study by the Pairings' common history, environment, structure, needs and resources. A few minor variations were attributed to differences in the three IHEs in the Pairings. Across the three Pairings, the IOA processes (see Figure 3) were found to have stabilized at the selling level as characterized in the following conclusions:

- the predominant current stage of interaction in the Pairings is negotiation (interaction leading to a growth of understanding and respect), which is just short of institutionalized cooperation and collaboration because it typically involves new initiatives by one Pairing group;

- the intitiation of activities in the Pairings is mixed, with the schools assuming the role of client (user) and the Universities/Colleges acting as services providers;

- the pattern of knowledge flow/use varies considerably, depending on the type of knowledge, and other process dimensions such as power, certainty, stability, needs, understanding, trust, perceived mutual benefit, and maturity (vis a vis problem-solving) of the participants; and

- the predominant type of inter-organizational behavior in the Pairing involves one participant group trying to "sell" other groups on ideas, projects, and activities.

(TDR, Vol. I, p. 166)

Hierarchy of Needs and Resources. As previously indicated in describing the conceptual model (see Figure 3), the study found a definite hierarchy (movement up the hierarchy) in the needs and resources in the Pairings. At the outset of each Pairing, the primary focus was on the school's needs for expanded access to the IHE's materials and facilities. As the Pairings progressed, the focus enlarged to include added personnel for direct service to students, and improved practices (e.g., in curriculum and instruction), and, in a few instances, increasing the schools' self-improvement capacity. Examination of the Pairings' needs and resources and their movement up the hierarchy led to these conclusions:

- matching school needs with college/university resources requires a detailed knowledge of the school situation, to insure that concerns and expectations are fully understood;

- school people and especially parents and community leaders often assumed that the resources of the "rich" colleges and universities were limitless and available, and that to pay for them constituted a "rip-off";

- evidence of knowledge flow/use increases as we move up the hierarchy of needs/resources applied to the Pairings' projects and activities;

- viewing themselves as clients to be served, school people came to expect college/university staff to do things for, more often than with them; and

- in most cases school people wanted additions to or refinement in their existing operations--few were interested in fundamental change or renewal.

(TDR, Vol. I, p. 167)

D. Successful Collaboration for School Improvement: A Case Study.

S. McKibbin

Description of the IOA

The Legislative Mandate. California State Assembly Bill 65 (AB 65) mandated that each elementary school district should assess the current basic skills achievement of its students to determine if they have reached the level of competency expected by the district. Elementary boards of education were required by law to adopt a set of competencies in reading comprehension, writing, and computation for grades 4-6 and 7-8 by June 1, 1979. The local board was also required to establish proficiency standards with the involvement of parents, administrators, teachers, and counselors. The legislation emphasized the assessment of each pupil's mastery of the basic skills rather than the pupil's performance relative to his or her classmates. (A companion bill, AB 3408, established similar requirements for secondary districts.)

The law allows individual districts to establish their own proficiency assessment standards. Districts may also decide which specific competencies will be tested and how this will be done. Some districts have decided to use standardized tests; others have chosen to develop their own measurement instruments. Some have met the requirement on their own; others have joined a cooperative effort aimed at meeting the legal requirements as completely and efficiently as possible.

The AB 65 Elementary Consortium. This case study of the AB 65 Elementary Consortium established in Santa Clara County, California traces the consortium's history, processes, and products from the initial discussions in October 1977 among 22 school districts and the county office of education through the summer of 1981. The impetus for the elementary consortium came from the Assistant Superintendents of Instruction of the county's elementary districts who meet regularly at the county office. A task force of five volunteers developed the following assumptions and recommendations for working together:

- Joint contribution of member districts would result in a pool of objectives and items as well as computer services that none of the member districts alone could afford;
- Member districts would be more able to introduce alternative instructional approaches using the products developed by a consortium;
- Commonly developed proficiency assessment standards, tests, procedures, etc., would be more likely to withstand legal challenges than would those developed by each district separately;

- The functions, purposes, and costs of the collaborative effort should be specified formally;
- Information and resources from outside the consortium would be necessary to complete the tasks.

Membership under the first formal one-year work agreement (authorized by the chief executive officer of each member agency) included 16 school districts, two universities and the county office. The work agreement, renewable on an annual basis, specifies the responsibilities of the member agencies, the products that will be provided to member agencies, the monetary and professional contributions of member agencies, and the responsibilities of the coordinating committee.

The county office contributes the organizational leadership for the consortium, serving as the fiscal agent and providing a coordinator and consultant assistance. A coordinating committee composed of the representatives from member agencies, has responsibility for deciding what activities shall be undertaken, what materials shall be purchased, what products, information, etc., shall be reproduced and distributed, when and how consultant services shall be used, and for developing and administering the consortium budget. The consortium also receives input from three groups through the member representatives: a faculty advisory committee, a community advisory committee, and administrators from each district. Ultimately, the board of education in each member district has the option of accepting, rejecting, modifying, or individualizing the consortium products for use in their own district.

Over the consortium's first three years, membership fluctuated considerably from the initial membership of 16 organizations to a low of 12 members in December 1978 to a high of 33 members in May of 1980. A total of 14 districts have joined the consortium but later dropped out. By the summer of 1981 the consortium had a total of 25 members: 23 school districts, one university and one county office. Eight of the school districts were located outside Santa Clara County.

Most of the consortium's work is carried out by member task forces with assistance from the coordinator and consultants. It also sought help from other staff at the Santa Clara County Office and from other county offices, the California State Department of Education (CSDE), private educational testing and consulting firms, and experts in member districts.

Altogether the consortium has developed some 25 products, training programs and information packages. These materials are viewed as invaluable, time-saving additions to the resources of many school districts in California. A variety of materials and manuals have been copyrighted by the consortium and have been made available for purchase by other districts throughout the state of California. In 1981, the consortium began to focus on entrepreneurial questions of copyright, marketing, and promotion. Funds received in excess of printing and distribution costs will be used to develop additional materials aimed at articulation between elementary and secondary requirements.

Features of the Study

Study Goals and Objectives. The purpose of the study was to describe one example of a voluntary cooperative arrangement established to meet proficiency testing requirements mandated by the California state legislature. A special effort was made to describe this particular arrangement not only to provide more detailed information about this type of IOA (i.e., a voluntary IOA organized to carry out a mandate), but also because this type of IOA provides a very promising model for successful collaboration among school districts that are confronted with requirements that may severely tax their individual resources. The study also demonstrates the importance of effective organizational leadership and significant participation and ownership on the part of member organizations.

The study documents the major events that occurred within this IOA, where members went for services and information, and how this knowledge was used. The cost, benefits, responsibilities and rewards of the cooperative efforts are described as they emerged over a three-year time frame.

Scope and Methodology. Data for this case study were collected and triangulated in three ways. Interviews were conducted with county office staff and consortium members. Respondent comments about the consortium's developmental processes and anecdotes about the collaborative involvement of members established the overall framework for the case.

Two researchers attended an all-day consortium meeting held at the end of the 1980-81 school year. Their observations of interaction and discussion among consortium members provided further data for the case description.

All of the archival documentation of consortium activities and transactions was reviewed. Information from meeting minutes, internal and external correspondence, budgets, evaluations, and reports contributed a considerable amount of data to the case study.

Key Study Findings

This consortium was selected for case study because of its reputation as a highly successful arrangement supporting improvement efforts mandated for member LEAs. Three outcomes verified the consortium's effectiveness.

Meeting the Mandate. This was obviously the most important outcome. Direct responsibility for meeting that proficiency assessment requirement rested with the individual districts rather than the consortium as a whole. However, the purpose of the consortium was to provide information, training, and products and materials that would assist, even ensure, that member districts fulfilled the basic requirements. The success of member districts demonstrated the consortium's success.

Products and Services. There are two primary indications of product and service effectiveness. First, members attribute their success in meeting the mandate in part to the existence of the products and services;

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i.e., the products and services have filled the basic needs of the districts. Moreover, the products and services are generally considered to be of high quality and have been in demand from many other California districts.

IOA Continuation. Finally, the effectiveness of this voluntary consortium is evident by its continuation beyond the mandate deadline (1979) to develop additional materials to articulate elementary and secondary requirements.

Summarized below are four key factors that the author identified as contributing to the consortium's success.

Strong Collaborative Environment. The consortium exists in a strong collaborative environment. In California and in Santa Clara County collaboration particularly among districts and the county office may well be the norm rather than an exception. At the state level, collaboration is encouraged by IOA authorizations or requirements included in a variety of legislation regarding educational improvements. In addition, the SEA actively encourages IOAs by providing some funding support for some types of consortia as well as rewarding collaboration with public recognition. In addition, the Santa Clara County Office has a long history of collaborative efforts with county districts and actively encourages staff members to seek out IOA opportunities. Most of the consortium LEAs in Santa Clara County also were already engaged in several other IOAs together. As a result, organizations in the consortium have a history of IOA participation together as well as many informal contacts.

Access to Increased Resources. Most of the IOA districts were small to medium sized and had limited slack resources, either money or expertise, to accomplish what they saw as an enormous task. The IOA provided a much larger pool of resources for developing the necessary products, materials, and training and for obtaining external (to the IOA) consultants, services, and information.

Local Autonomy. It was very clear to all IOA members that each district (not the IOA) was ultimately responsible for meeting the mandate, so that districts were initially concerned about obtaining assessment materials that appropriately reflected their own standards, philosophies, and curricula. The consortium chose to create flexible, modular products that could be adapted to each district's needs. In addition, it was clearly agreed that the board of education in each district retained its autonomy with the option of accepting, rejecting, or modifying any or all of the consortium products. Confidence in their local autonomy seemed to pave the way for vigorous district participation.

Leadership. During the consortium's early days, there were several false starts and some confusion about approaches to the tasks that led to detours and potential dissolution of the IOA. Member representatives give major credit for the IOA's continuation and subsequent performance to the coordinator. He was recognized as a particularly effective leader, keeping the IOA and the numerous task forces on target, chairing meetings skillfully, providing clear and comprehensive communications to members, and in particular, sensing when changes or immediate action was needed. In this case, a strong

organizational and individual leader contributed significantly to the IOA's success.

Finally, in documenting the history of the collaboration, the investigator noted these two points about the development of IOAs:

- Interorganizational arrangements, like organizations themselves, are constantly evolving. Sometimes this evolution takes the group down detours; other times it provides a direct route to effective cooperation.

- Interorganizational arrangements follow predictable stages of development. Initially, they will probably have vague goals, fluid participation of members, and an ambiguous plan for moving ahead. Trial-and-error activity can be expected during the early months, if not longer. This is followed by a more stable period with clearer objectives and directed activity. Such changes are normal and healthy.

E. Industry-Education Collaboration for School Improvement

C. S. Cates

Description of the IOAs

The Industry-Education Council of Santa Clara County. One of the most recent and most active of 22 California councils, the Santa Clara IEC was formed in 1978 with 18 member organizations evenly divided between educational agencies (the county office of education, one community college, and seven school districts) and business or business-related organizations (e.g., Hewlett-Packard, Pacific Gas and Electric, San Jose Chamber of Commerce, and Santa Clara County Labor Council). By December 1981 membership had almost doubled to 34 organizations (15 business or business-related organizations and 19 educational agencies). Only one of the original members had withdrawn, the National Alliance of Business (which dissolved).

From the beginning, both employers and educators recognized substantial reasons to be involved as IEC members. Employers saw the council as an avenue of direct influence and penetration into school planning and operation, as well as a means of focusing their investments in school support. Educators saw it is a primary means of determining what employers want from schools, generating resources for programs, and improving the public image of schools.

Three areas were established as priority goals and objectives: 1) to increase communication and linkages between business and education; 2) to promote pilot demonstration activities to improve youth transition from school to work; and 3) to improve the delivery of services to youth from the various county agencies and employers. Underlying these goals is the philosophical view that schools have two primary client groups--students and employers--and that the results of the educational process should be targeted to both groups. Under this philosophy, employers are seen as natural partners with educators in supporting and participating in educational improvements efforts.

Established as a nonprofit organization, the council is governed by a board of directors composed of a representative of each member institution (there are no individual memberships). All of the organizations are represented by midlevel or upperlevel executives, on the assumption that organizational commitments can be made more firmly and necessary resources allocated more quickly to IEC projects by representatives with upper-level authority and responsibility. Leadership for the board is provided by a seven-member executive board, with approximately equal industry and education representation that sets council policy and oversees operations in monthly meetings. Ad hoc task forces plan and carry out special projects. Depending on the nature of the project, task forces may include representatives of nonmember organizations as well as board members and other member representatives. Quarterly meetings for all members provide a direct voice in council activities and a regular forum for communication among members and guests (e.g., legislators).

Staff support for the council consists of a full-time executive director, who has held this position since the council's inception, and a secretary. The executive director, a career educational administrator, is a loaned executive from the county office of education. He is responsible both for promoting IEC interest and activities and for managing specific projects and council activities. Ongoing funding comes primarily from membership fees and contributions. Grants from federal and state agencies have been received for some specific, limited-term projects. In addition, the county office of education where the council office is housed, provides in-kind services and a portion of the funds for office operation, and the state IECC provides a small annual "housekeeping" grant.

Over its three years of operation, the council has engaged in a wide variety of projects and activities. In addition to providing a communication forum for its own membership, it has piloted a county-wide newsletter for increasing business-education communication; has provided in-service workshops for educators to better inform them about the employment needs and resources of the community; has served as resource and information broker between the business and education sectors; and has developed proposals for activities such as a clearinghouse for county-wide resources.

However, from the council's inception, the major emphasis has been on "doing things" and "getting results." Its major activities have been organized around identifying and implementing resources and influences that can be applied to bring improvements as soon as possible. With this orientation, it has operated primarily in the special-project mode, concentrating particularly on demonstration projects that can be incorporated into the regular programs of existing youth-serving agencies and that can be replicated or adapted in other communities. In this regard, the council sees itself as a catalyst for trying out new or alternative solutions to specific community problems as exemplified by the following two projects:

- Career Passport--originally funded by the U.S. Department of Labor, the purpose of this project is to provide an easily implemented method of documenting employability skills of the 50 to 80 percent of high school students who have no previous employment experience. By December 1981, approximately 2,000 students had completed passports. The IEC intends to adapt the passport to other school settings (e.g., juvenile court schools) and to expand its use to other schools in the area, the state, and beyond, using the state council as a dissemination network.

- Mobile Computer Van Project--This locally funded project provides a mobile computer van with 15 learning stations, an instructor, and a driver who also assists the teacher during instruction. By the end of the spring 1982 semester, the project will have served approximately 8,250 students in 275 separate classes at 76 schools.

The Industry-Education Council of California (IECC). With 22 local or area councils and similar organizations, California has more industry-education partnerships than any other state. Although the individual councils share a central goal of improving the transition from classroom

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to employment, all are very much local-level operations with different origins, histories, and organizational structures. Each is an individual, locally responsible entity based on existing community elements, and specific activities vary according to community needs and interests. Most are organized as nonprofit agencies, with their primary source of ongoing funding coming from membership dues and a small housekeeping allotment from the statewide umbrella organization, the Industry-Education Council of California (IECC).

Funds for special projects come from various sources, such as the state Career Education Incentive Act, Private Industry Council funds, federal CETA funds, and the statewide council. Of the 22 local councils, only seven have paid staff. The rest carry out their activities through project task forces, standing committees, or volunteer assignments among member organizations and their representatives.

At the state level, the Industry-Education Council of California is a separate, nonprofit organization. The functions it perfoms in this capacity are similar to those performed in other educational dissemination and school improvement activities:

> It acts as catalyst, linking agent, resource coordinator, and implementor for national, state, and regional education-to-work activities. It also identifies promising practices, concepts, and develops pilot demonstrations that can be adapted at the state, regional, or community levels. (Business and 5 Million Californians in School, 1980, p. 2.)

From its origin in 1974, the IECC has had the direct sponsorship of a great number of corporations representing a wide variety of industries (e.g., banking, manufacturing, transportation, and electronics), and the active participation of equally numerous and varied education and public agencies (e.g., school districts, county offices of education, statewide professional associations, community colleges, and state and federal human service agencies). By 1981, the state council had over 100 direct corporate sponsors and 68 direct education/public agency participants. When local-level members are included, more than 1,200 agencies participate in California IECC activities. The state council's governance is the reponsibility of a 60-member board of directors, drawn from the upper levels of member organizations. Its activities are directed by a 12-member executive committee. Admninistration is carried out by paid staff and loaned executives from business and education, and is headed by an executive secretary. Among the programs directly implemented or coordinated by the IECC are: career exploration and work experience projects; educator training clinics for establishing business-education collaboration; community career resource centers; magnet career learning centers; and motivation programs for elementary students and their parents. In addition, the council maintains a special fund for "hot ideas"--local programs of merit--and serves as fiscal agent for local councils participating in state or national projects awarded through or coordinated by the IECC. These and other activities and services are supported with an estimated (1980) annual budget of just over one million dollars, supplemented by nearly equivalent in-kind services from members. The

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fiscal amount is split almost evenly between direct memberships and loaned executives from business and education and funds awarded primarily by public agencies for special projects.

Features of the Study

Study goals and objectives. Findings from another study included in this synthesis (Cates, Hood & McKibbin, 1981) suggest that most improvement-oriented IOAs involve only educational organizations (primarily school districts, intermediate service agencies, and institutions of higher education).

However, there are also many instances in which educational agencies and private businesses and industries collaborate in primarily voluntary arrangements in order to carry out some locally important improvement effort. In addition to extending resources and reducing duplication of effort, these arrangements serve the equally important purpose of providing a means for increasing and improving communication and understanding between two communities that are often divergent in their goals, modes of operation, and perceptions of one another.

At a time when federal and state resources for education are being rapidly reduced and when public attention is increasingly focused on improving public education, local partnerships between education and business and industry hold great potential for continuing existing school improvement efforts and initiating future efforts.

The purpose of this report was to present an overview of collaborative councils--one form of business-education partnership--with examples of the activities of one local council and of one statewide network.

Scope and methodology. The keyword in describing the scope of this study is "overview." As one of three companion studies on interorganizational arrangements (the other two being Cates, Hood & McKibbin, 1981, and McKibbin, 1981), its intent was to provide additional illustrative information about an alternative voluntary arrangement rather than an in-depth examination. Data were gathered primarily from two sources. First, background data about collaborative councils were gathered from a review of the most recent, broadly informative study of collaborative councils, the two-year Industry-Education-Labor Collaboration Project, conducted by the Center for Education and Work of the National Institute for Work and Learning (formerly the National Manpower Institute). Funded by the Office of Vocational and Adult Education in the U.S. Department of Education, the project was designed to highlight and "to respond to the increasing nationwide interest in collaborative councils and to support the policy and planning needs" of the sponsoring agency (Elsman, 1981, p. viii). Three volumes of project findings were reviewed:

1) Fraser, B. S., et al. Industry-Education-Labor Collaboration: The Literature of Collaborative Councils (1981);

2) Gold, G. G., et al. Industry-Education-Labor Collaboration: A Directory of Collaborative Councils (1981); and

3) Elsman, M. Industry-Education-Labor Collaboration: An Action Guide for Collaborative Councils (1981).

Second, data about the Santa Clara IEC and the California statewide council were collected from three sources. Preliminary background data were drawn from the review of Gold (1981), listed above. In-person and telephone interviews with the Executive Director of the Santa Clara IEC provided additional data about both councils and their relationships. Finally, documents concerned with the Santa Clara IEC were collected and reviewed (e.g., descriptive brochures, project reports, agenda, and minutes of council meetings).

Key Study Findings

The investigator points out that a brief, primarily descriptive study such as this does not lend itself to broad generalizations about collaborative arrangements. However, the study does identify several factors that have influenced participants' perception of success and have contributed to the continuation of the arrangement.

The IOA as "Neutral Turf". Although IEC members in each sector (i.e., business and education) had had numerous prior linkages within their own sector, there had been very little formal or ongoing collaboration among members across the sectors. To some extent each sector tended to see the other as responsible for problems in their own sector. For example, from the business perspective cutbacks and declining enrollments in math, science, and technology programs were often seen primarily as unresponsiveness on the part of education to critical local business needs for personnel trained in these areas. In addition, some business organizations tended to see schools and districts as asking for business sector support without showing relevant improvement. From the education perspective, the business sector has often been cited as making an already difficult situation worse by "raiding" the diminishing pool of teachers most necessary to carry out even minimally adequate programs. From the initial meetings, both sectors agreed to establish the IEC as a neutral turf where business representatives and educators could work productively on concerns of mutual interest. Maintaining the council's neutrality has been cited as a factor in its continuation and productivity.

Mutual ownership. No one organization, small group of organizations, or sector has dominated or been perceived to dominate the decisions, resources, or activities of the arrangement. Members saw a balance of participation and responsibility in the governance structure, the planning and implementation task forces, and in the actual carrying out of activities. Activities and accomplishments are seen as "our goals", "our projects," "our work" rather than "theirs" or "the Councils."

Executive commitment. This IOA consciously carried the notion of organizational commitment farther than do most educational IOAs, by requiring executive-level representation. The assumption was that, particularly at the outset of the arrangement, decisions and actions could be taken more quickly if differences between sector perspectives and operational methods could be negotiated directly among the

organizational leaders. When organizations from different sectors are working together for the first time, this form of demonstrating involvement and commitment may be a sound guideline.

"Getting results." According to the IEC Executive Director, getting results has been the bottom line of success in the eyes of the members. They have been able to see and report evidence of accomplishment that justifies their continued personal and organizational participation and commitment. They also credit their "getting results" orientation for the increased membership and consequent increased resources. This in turn, they believe, has created a positive, renewed cycle of commitment, ownership, resources, and results.

F. An Exploration of Interorganizational Arrangements that Support School Improvement

C. S. Cates
P. D. Hood
S. McKibbin

Description of the IOA

In contrast to the other five studies that provide case studies of from one to three IOAs, the focus of this study was on identifying the number and variety of arrangements within a limited area. The total number of arrangements was identified (103) and the number of IOA types (9) that were developed as a classification system preclude descriptions such as the ones given in the other synopses. The study itself provides descriptions of characteristics of classes of arrangements (Appendix, pp. 114-174) and also includes a chapter on comparison of characteristics of IOA types (Chapter IV, pp. 69-91). Some of the major features of the IOA types are discussed in the findings section of this synopsis.

Features of the Study

Study goals and objectives. The purpose of this study was to explore, map, and describe formal dissemination and school improvement linkages among educational organizations and to develop frameworks for description and analysis of interorganizational arrangements in education. Given the exploratory nature of the study and constraints on conducting a nationwide study, four immediate and feasible objectives were set forth:

- To identify within a sizable geographic area the variety of IOAs that support school improvement efforts.
- To identify, describe, and analyze examples of predominant types of IOAs in terms of their history, context, structure, operations, and outcomes.
- To examine the nature and extent of key factors that influence the establishment and continuation of effective IOAs.
- To identify and assess present and potential strategies for establishing and continuing effective IOAs.

The assumption was that even a limited "census" associated with the first objective and a preliminary classification system and analysis associated with the remaining objectives could provide a starting point for a larger "map" of both number and classes of arrangements and IOA support strategies.

Scope and methodology. The geographic area selected for study was the 13 counties in the Greater San Francisco Bay Area: Alameda, Contra Costa, Marin, Monterey, Napa, San Benito, San Francisco, San Joaquin, San Mateo, Santa Clara, Santa Cruz, Solano, and Sonoma. In 1978, the study area contained a population approaching six million persons, slightly over 25% of the total California population. The 231 public school districts in the area accounted for 22% of the state total and enrolled about one million pupils, nearly 25% of the state total.

In the absence of actual data about the population of IOAs, the rationale was to identify a geographic area that included at least some variety in general demographic, socioeconomic, and educational characteristics. The assumption was that variety in these general characteristics would also yield variety in the educational organizations and educational IOAs that could be identified in the area. Although the study area is not statistically representative of the nation as a whole, it does reflect substantial social, political, economic, and educational diversity.

Interorganizational arrangements were identified through interviews with staff in the California State Department of Education and in the 13 County Offices of Education and through collection and review of documents such as directories of school improvement programs, dissemination networks, and consortia. Descriptive data about the arrangements were gathered through field and telephone interviews with arrangement coordinators and review of documents and records supplied by respondents. Respondents were asked to describe their arrangements in terms of five dimensions: history; environmental context; structure; operations; and output.

Data were examined principally in two ways. The first emphasis was on organizational participation in IOAs in terms of the numbers and types of organizations participating; the number of arrangements in which each type participated; the frequency of participation by organizations within each type; and the location of participating organizations relative to the study area (i.e., within the 13 Bay Area counties, in other California counties, outside California).

One hundred and three formal "school improvement" IOAs were identified. The 485 organizations identified as participants in one or more of the 103 arrangements were grouped in two larger categories: educational organizations and noneducational organizations. Educational organizations were further subdivided into seven types: school districts; county offices of education; institutions of higher education; research and development agencies; state departments of education; other educational organizations; and interorganizational arrangements per se.* Other educational organizations included private schools, parochial districts, professional educational associations, etc. There were two types of noneducational agencies. One type, for profit, includes all business and industrial participants; the

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*IOAs were included as an organizational class to account for those instances in which an IOA participates as an organizational entity with individual organizations or with other IOAs in another arrangement.

other combines both public agencies, such as a public utilities district, and private, nonprofit agencies, such as Planned Parenthood.

The second emphasis was on identifying predominant types of arrangements in terms of the source of impetus, initiative, or support for establishing or formalizing the arrangement. Two dimensions were considered: the legal status of the improvement effort that is supported by the arrangement and the legal status of the arrangement itself. For each dimension, three categories were identified: mandated, enabled, and freestanding. The cross-classification of the two dimensions produced nine types of IOAs. For example, a state law requiring all local education agencies to establish minimal competency testing intruments and standards (hence a mandated improvement effort) was a catalyst for several school districts to form voluntarily a minimal competency testing consortium (a freestanding arrangement). Conversely, voluntary participation in an externally funded school improvement effort, such as Teacher Corps (enabled improvement effort), may require the establishment of an IOA (mandated arrangement).

Key Study Findings

Organizational participation. The 103 arrangements identified suggest a richly connected network of collaborative efforts. Table 6 provides an overview of organizational participation in the arrangements. The 103 IOAs were composed primarily of educational organizations that accounted for 409 (84%) of the 485 organizational participants. School districts far outweighed all other subgroups, both in total number of participants (266), and in the number and percent of IOAs in which they participated (90 IOAs--87%). County offices represented in 59% of the 103 IOAs (57%), were the only other group represented in substantially more than 25% of the IOAs. The 231 public school districts and 13 county offices in the Bay Area are in fact the total number of these agencies in the study area. All of these Bay Area public school districts participated in at least one IOA, and 90% were in two or more. The 58 county offices were the only group in which all participated in at least two IOAs; all 13 Bay Area county offices were involved in three or more IOAs. Of the remaining types of educational organizations, all or a majority of participants were involved in only one arrangement, although there were instances of more frequent participation in three types (institutions of higher education, R&D agencies, and state departments of education).

Each of the 76 noneducational organizations participated in only one arrangement, and there were only six IOAs that include all of the noneducational members.

The predominance of school districts and county offices as IOA participants, both as separate organizational classes and in combination, seems to be a logical consequence of their respective roles and relationships in school improvement efforts. The principal function of school districts is to provide education services and programs to students. Consequently, districts are the most frequent target or locus of school improvement efforts. As school improvement was defined for this study, virtually all other classes or organizations would be perceived as providing support for district efforts. In California, two major functions of the county offices are to provide direct

Table 6. Organizational Participation in IOAs

Organizational Type	Total Organizational Participants	Bay Area Organizational Participants	Other California Organizational Participants	Non-California Organizational Participants	IOAs in which Organizational Class Participates #	IOAs in which Organizational Class Participates %	Range of Participation Frequency for Individual Organizations
Educational Organizations							
School Districts	266	231	24	11	90	(87)	1-8
County Offices of Education	58	13	45	-	59	(57)	2-18
Institutions of Higher Education	41	20	17	4	26	(25)	1-5
Research & Development Agencies	8	2	-	6	18	(17)	1-18
State Departments of Education	3	-	1	2	6	(6)	1-3
Other Educational Organizations	28	27	-	1	8	(8)	1
Interorganizational Arrangements per se	5	5	-	-	2	(2)	1
Sub-total	409	298	87	24			1-18
Non-educational Organizations							
Public Agencies & Private Non-profit Agencies	39	34	5		5	(5)	1
Businesses	37		37		1	(1)	1
Sub-total	76	34	42				1
Total All Organizations	485	332	129	24	103		1-18

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support services to individual districts and to provide coordinating support.

There were 20 different combinations of organizational subgroups that shared IOA membership, but four combinations accounted for 73% of the arrangements. The combination of school districts and county offices accounted for almost 40%. The other three combinations accounted for about 11% each: school districts and R&D agencies, school districts and institutions of higher education, and school districts with other school districts.

Between-county differences. Examination of between-county differences in IOA activity revealed several findings, which are summarized in Table 7. First, the number of IOAs in which organizations within each county participated covered a broad range--from 25 IOAs in Santa Clara and San Francisco counties to seven in San Benito county. However, within this range, nine of the 13 counties had organizations participating in 10 or fewer IOAs.

Second, with the exceptions of San Francisco*, Santa Cruz, and San Joaquin counties, the number of IOAs in which organizations in each county participated tended to be associated with the population and public school enrollment in the county. In general, the counties with larger populations and larger public school enrollment also had the large numbers of IOAs. This tendency is consistent with the Hood and Blackwell (1979) findings that size of population and school enrollment are the most consistent predictors of general educational knowledge production, dissemination, and utilization (KPDU) activities. In other words, county-wide IOA activity like general KPDU activity, appears to be related to levels of population and public school enrollment.

To the extent that population and enrollment levels reflect or stand as proxies for availability of educational resources in general, it appears that collaboration occurs more frequently in areas that have greater resources and less frequently in areas that have fewer resources. Since one frequently cited benefit of collaboration is extending or multiplying scarce resources, this pattern suggests a discrepancy between levels of resource need and levels of resource-extending collaboration.

Third, most of the county offices of education participated in two-thirds or more of the total number of IOAs in the county (with the exception of San Francisco and Alameda counties, where county office participation is substantially less). Again, this reflects the support roles and functions of the county offices.

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*Among the 13 counties, San Francisco County is anomalous in several ways that contribute to the exceptions noted for San Francisco County in this study. For example, a single school district serves both the city and the county. The percentage of county population enrolled in public schools in San Francisco (approximately 10% in 1977-78) was much lower than the percentages in other counties, which ranged from 16-24%. Within the county, there is a greater concentration of institutions of higher education, R&D agencies, and other educational agencies that were identified as IOA participants.

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Table 7. Between-County Differences in IOA Activity

Counties	Number of IOAs in which County Organizations Participated	Number of IOAs in which County Offices Participated	Range of IOAs per School District	Population 1978 (1,000)	Public School Enrollment 1977-1978 (1,000)	Number of School Districts
Santa Clara	25	18	3-8	1,228	258	33
San Francisco	25	6*	6*	659	63	1
Alameda	19	5	1-6	1,102	192	19
San Mateo	13	12	1-4	585	96	23
Contra Costa	10	7	2-5	613	127	18
Sonoma	9	6	1-3	272	51	41
Solano	9	6	3-4	208	41	6
Santa Cruz	9	9	2-4	174	30	11
San Joaquin	8	7	2-4	314	63	18
Monterey	8	8	1-3	275	51	25
Marin	8	7	1-3	201	37	20
Napa	8	7	3-5	94	16	5
San Benito	7	5	1-2	21	5	11

* There is a single district for the city and county of San Francisco.

Fourth, school district participation in IOAs tended to be associated with the number of IOAs in which county organizations participate. The larger the total number of IOAs in which all county organizations participate, the larger the number of IOAs per district in terms of the range of frequency.

Classification system. When the data were examined in terms of the two dimensions of legal status (legal status of the improvement effort and legal status of the arrangement itself), three major categories distinguished among the levels or degrees of legal status in each of the two dimensions. Mandated improvements or arrangements are required by an agency external to member organizations. The external agency may be a governing or administrating agency, a legislative body, or a judicial agency. Enabled improvements or arrangements receive sponsorship, incentives, encouragement, and/or resources from an agency external to member organizations. For example, they may be provided for but not imposed in legislation and/or may receive special technical assistance, consultation, or fiscal resources from external organizations, such as state or federal agencies or foundations. Freestanding improvements or arrangements are established, maintained, and/or supported primarily or solely by the participating organizations.

The three IOA categories based on the legal status of the arrangement were designated as the major classification category and the three classifications based on the legal status of the school improvement effort it supports were designated as the secondary classification. The major categories and subcategories in each are:

I. Mandated Arrangements

I.A. Mandated Arrangement-Mandated Improvement Effort

I.B. Mandated Arrangement-Enabled Improvement Effort

I.C. Mandated Arrangement-Freestanding Improvement Effort

II. Enabled Arrangements

II.A Enabled Arrangement-Mandated Improvement Effort

II.B Enabled Arrangement-Enabled Improvement Effort

II.C Enabled Arrangement-Freestanding Improvement Effort

III. Freestanding Arrangements

III.A Freestanding Arrangement-Mandated Improvement Effort

III.B Freestanding Arrangement-Enabled Improvement Effort

III.C Freestanding Arrangement-Freestanding Improvement Effort

Among arrangements identified in this study, there were none that could be classified as mandated arrangements supporting freestanding

improvement efforts (I.C.) or enabled arrangements supporting freestanding improvement efforts (II.C.). Although it is conceivable that federal or state policy might mandate or enable the creation of "general purpose" arrangements,* most federal and state improvement policies tend to be "categorical" (or targeted), and provisions for arrangements supporting these categorical improvement efforts tend to be "derivative" (i.e., the arrangements are mandated or enabled as means to support the larger, but categorical objectives of the mandated or enabled improvement efforts). Consequently, it appears that only freestanding arrangements support freestanding improvement efforts.

Programmatic areas and sources of external stimulus. Table 8 shows the various topical or programmatic areas within each category and subcategory, along with the major source of mandate or enablement. There are 15 clearly defined programs or topical areas that account for about 90 percent of the 103 arrangements. The remaining 10 percent support a miscellany of improvement efforts. Of the 15 clearly defined programs, seven focus primarily on staff development activities and account for 35 percent of the total number of arrangements. These staff development arrangements occur in four of the subclasses: I.B.--Teacher Corps Projects, Professional Development and Program Improvement Centers; II.B--School Resource Centers, Teacher Centers; III.B.--Staff Development Projects; III.C.--Staff Development Consortia. Staff development was the only area supported both in such a concentrated manner and with as many different types of arrangements. Mandates or enablements were provided overwhelmingly by state or federal sources with programs evenly split between the two at seven each.

IOA distribution within the classification system. Table 9 summarizes the distribution of the 103 arrangements within the classification system. For mandated and enabled IOAs, over three-quarters of the arrangements fell into the subclass that supported the opposite class of improvement effort. This is, most mandated IOAs support enabled improvement efforts (I.B.), and most enabled IOAs support mandated improvement efforts (II.A.). Over 75 percent of the IOAs identified belonged to one of the four subclasses (I.A., I.B., II.A, II.B) in which there was a joint external influence, mandated or enabled, on both the IOA itself and the school improvement effort the IOA supported. IOAs based on mandate or enablement of the IOA itself or of the improvement effort they supported accounted for 86 percent of all IOAs. Only 14 percent of the IOAs were freestanding arrangements supporting freestanding improvement efforts. These findings strongly suggest that some form of external stimulus significantly affects the formation of the great majority of all these school improvement IOAs. This point raises an obvious question: Will collaboration for school improvement continue if or when external mandates and/or enablements are diminished or eliminated?

On the negative side, it can be argued that, since improvement activities generally require slack intraorganizational resources (especially money and staff time), improvement efforts themselves, whether intra- or interorganizational, will decrease or disappear as general educational resources are

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*For example, cooperative intermediate service agencies legislatively required or permitted in 19 states may fall in these two subgroups.

Table 8. Programs and Sources of Mandate or Enablement by IOA Categories and Subcategories

CATEGORIES, SUBCATEGORIES, AND ARRANGEMENTS	NUMBER OF IOAs			Principal Source of Mandate or Enablement
I. Mandated Arrangements	35			
I.A. Mandated Improvement Efforts		8		
- Consolidated Application Cooperatives			(8)	State program
I.B. Enabled Improvement Efforts		27		
- Teacher Corps Projects			(6)	Federal program
- Professional Development and Program Improvement Centers (PDPIC)			(2)	State program
- Responsive Education Programs			(13)	Federal program
- Mathematics, Engineering, and Science Achievement--MESA			(5)	Foundation, businesses
- Miscellaneous			(1)	Businesses
I.C. Freestanding Improvement Efforts		0		
II. Enabled Arrangements	44			
II.A. Mandated Improvement Efforts		32		
- Regional Occupational Program/ Centers--ROP/C			(16)	State & federal programs
- Special Education Consortia			(16)	State & federal programs
II.B. Enabled Improvement Efforts		12		
- School Improvement Consortia			(5)	State program
- School Resource Centers			(2)	State program
- Teacher Centers			(5)	Federal program
II.C. Freestanding Improvement Efforts		0		
III. Freestanding Arrangements	24			
III.A. Mandated Improvement Efforts		4		
- Proficiency Assessment Consortia			(4)	State program
III.B. Enabled Improvement Efforts		6		
- Staff Development Projects			(2)	Federal programs
- Miscellaneous			(4)	Federal programs
III.C. Freestanding Improvement Efforts		14		
- Staff Development Consortia			(6)	
- Health Education Consortia			(2)	
- Career Education Consortia			(2)	
- Miscellaneous			(4)	

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Table 9. Distribution of Arrangements by Categories of Arrangements and by Categories of Improvement Efforts

IMPROVEMENT EFFORT Total 103 (100%)	ARRANGEMENTS I. MANDATED 35 (34%)	 II. ENABLED 44 (43%)	 III. FREESTANDING 24 (23%)
A. MANDATED 44 (43%)	I.A. 8 (8%) Total (23%) Col. I (18%) Row A	II.A. 32 (31%) Total (73%) Col. II (73%) Row A	III.A. 4 (4%) Total (17%) Col. III (9%) Row A
B. ENABLED 45 (44%)	I.B. 27 (26%) Total (77%) Col. I (60%) Row B	II.B. 12 (12%) Total (27%) Col. II (27%) Row B	III.B. 6 (6%) Total (25%) Col. III (13%) Row B
C. FREE-STANDING 14 (14%)	I.C.	II.C.	III.C. 14 (14%) Total (58%) Col. III (100%) Row C

diminished or eliminated. In addition, although collaboration is often intended to extend limited resources, the act of collaboration itself also requires at least some slack in intraorganizational resources in order for organizations to participate effectively. In particular, it is often the case that the time each organization's representative spends in IOA activities is "extra" time: that is, representing the organization in the IOA adds to, rather than replaces, other functions, duties, and responsibilities of the staff member assigned as the IOA representative. It seems likely that one result of reduced resources will be the reduction of staff within educational organizations and the increase in intraorganizational "maintenance" functions and responsibilities assigned to each staff member. Consequently, fewer personnel and less time would be available for IOA participation, especially in smaller organizations with already small staffs.

On the positive side, it can be argued that, where existing IOAs are perceived as successful or effective by member organizations, collaboration seems likely to continue (although perhaps at a reduced level of activity or formality), in spite of reduced or eliminated external resources or requirements. For one thing, a pattern of relationships and a general cooperative environment have been established among organizations that have participated or are now participating together in an IOA. Where the relationships have been successful, the pattern is likely to be continued or repeated. Continuation or repetition seems especially likely where collaboration has been inititated at least partially in response to previous resource cutbacks (e.g., in response to Proposition 13 cutbacks in California) and/or where a group of organizations have participated or are now participating together in several collaborative efforts.

However, the investigators pointed out that the nature of the arrangements may shift toward more sharply focused collaboration. That is, organizations may be less willing and less able to commit resources to long-term relationships, activities, and projects, but they may still be willing, even eager, to share resources on an ad hoc basis for specific limited time frames and activities (e.g., a one-semester series of staff development workshops).

Organizational participation in IOA categories. Table 10 shows organizational participation in the categories. School districts and county offices were the most broadly represented. The 90 arrangements in which districts participated were distributed thoughout all seven subclasses of IOAs. Moreover, all of the arrangements in each of five IOA subclasses (I.A., I.B., II.A., II.B., III.A) had at least one participating school district. County offices participated in all of the freestanding IOAs supporting freestanding improvement efforts (II.C.) and in most of the IOAs supporting mandated improvement efforts (I.A., IIA., III.A).

Of the other organizational types, only IHEs were represented in as many as five of the seven subclasses of IOAs (all but I.A. and III.A.). However, they were represented most heavily in mandated arrangements supporting enabled improvement efforts. R&D agencies were represented only in arrangements supporting enabled improvement efforts (I.A., III.B.). Noneducational agencies were represented in only two subclasses (I.B.:

Table 10. Participation of Types of Organizations in Categories and Subcategories of IOAs

IOA Major Class	I. Mandated IOA			II. Enabled IOA			III. Freestanding IOA				TOTAL
Improvement Sub-Class	A. Mandated	B. Enabled	TOTAL Mandated IOAs	A. Mandated	B. Enabled	TOTAL Enabled IOAs	A. Mandated	B. Enabled	C. Free-Standing	TOTAL Free-Standing IOAs	All classes of IOAs
Number of IOAs	8	27	35	32	12	44	4	6	14	24	103
Type of Participating Organizations											
School Districts	8	27	35	32	12	44	4	1	6	11	90
County Offices	8	2	10	26	5	31	4	-	14	18	59
Institutions of Higher Education	-	14	14	3	5	8	-	2	2	4	26
R&D Agencies	-	13	13	-	-	-	-	5	-	5	18
State Departments of Education	-	1	1	-	-	-	-	3	2	5	6
Other Educational Organizations	-	-	-	-	3	3	-	2	3	5	8
Non-Educational Organizations	-	2	2	-	-	-	-	-	3	3	5

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Mandated Arrangement-Enabled Improvement Effort, and III.C.: Freestanding Arrangement-Freestanding Improvement Effort). These findings suggest that school districts and county offices would be the most likely, perhaps the only, IOA participants in the absence of external stimulus.

Conclusions

Data collected in the 13-county study area produced some surprising findings about the number and variety of arrangements and the frequency with which educational organizations engage in formal collaborations. These findings suggest two major conclusions about interorganizational arrangements that support school improvement effects.

There appears to be a multifaceted network of educational organizations engaged in many and varied collaborative school improvement efforts. In the study area, formal collaboration is a ubiquitous reality. Although individual arrangements may vary greatly in levels or degrees of complexity, the overview of the 103 IOAs suggest numerous, potentially highly complex interorganizational structures and interactions. Neither the present extent nor the existing and potential complexity of such arrangements has yet been fully recognized by most organizational participants in IOAs, by educational researchers, or by educational policymakers at various levels.

The findings from this study suggest that the typical view of educational organizations, especially school districts, as isolated from one another by preference and tradition is inaccurate. In its place must be considered an alternative view in which there is, in general, moderate to frequent formal collaboration in support of school improvement efforts.

Most formal collaborative arrangements are established or formalized in response to some external requirement or enabling resource for the improvement effort or for the arrangement, or for both. Only 14 of the 103 study area IOAs were freestanding both in the legal status of the improvement effort and in the legal status of the arrangement. If this pattern holds true in other areas, two competing conclusions are suggested.

On the one hand, it can be concluded that educational organizations are highly responsive to external initiatives (usually from federal and state agencies) for improvement and that they actively seek out or respond to opportunities to share resources as well as to seek out and make use of external resources and support. Stated another way, it could be said that federal and state initiatives have been highly successful in stimulating educational organizations, again, especially school districts, to engage in collaborative improvement efforts.

On the other hand, it could be concluded that educational organizations demonstrate little interest or activity in collaborative efforts unless some external agency requires the effort and/or provides the primary resource support for such an effort. Viewed in this light, and drawing on the conclusions of large-scale evaluations and studies of previous federally sponsored improvement programs (e.g., Berman & McLaughlin, 1975-77), it can be inferred that a reduction or elimination

of external mandate and/or resource support would result in a concomitant reduction or elimination of collaborative improvement efforts.

IV. CROSS-STUDY SYNTHESIS

The previous chapter summarized six recent studies of interorganizational arrangements that supported school improvement efforts. This chapter presents the findings of the cross-study synthesis organized around three topics:

A. Classification of the IOAs

B. Comparisons of IOA Characteristics

C. Synthesis of Key Findings
   General Cross-Study Findings
   Predominant Cross-Study Outcomes

A. Classification of IOAs

In the Cates, Hood, and McKibbin (1981) exploratory study, IOAs were classified according to the nine types of IOAs listed below:

I. Mandated Arrangements

- I.A. Mandated Arrangement-Mandated Improvement Effort
- I.B. Mandated Arrangement-Enabled Improvement Effort
- I.C. Mandated Arrangement-Freestanding Improvement Effort

II. Enabled Arrangements

- II.A. Enabled Arrangement-Mandated Improvement Effort
- II.B. Enabled Arrangement-Enabled Improvement Effort
- II.C. Enabled Arrangement-Freestanding Improvement Effort

III. Freestanding Arrangements

- III.A. Freestanding Arrangement-Mandated Improvement Effort
- III.B. Freestanding Arrangement-Enabled Improvement Effort
- III.C. Freestanding Arrangement-Freestanding Improvement Effort

In this classification system, each cell or subgroup represents a policy option available for using IOAs to support school improvement efforts. The 103 arrangements identified in this study occupied only seven of the nine cells. None could be classified as mandated arrangements supporting freestanding improvement efforts (I.C.) or enabled arrangements supporting freestanding improvement efforts (II.C.). According to the investigators this finding suggested that these two policy options are rarely if ever exercised. Although they acknowledged the possibility that federal or state policy might mandate or enable the creation of "general purpose" arrangements that would support freestanding school improvement arrangements, they pointed out that most federal and state improvement policies tend to be "categorical" (or targeted), and provisions for arrangements supporting these categorical improvement efforts tend to be

"derivative" (i.e., the arrangements are mandated or enabled as means to support the larger, but categorical objectives of the mandated or enabled improvement efforts). Consequently, it appeared that only freestanding arrangements support freestanding improvement efforts.

However, when the case study IOAs are arrayed in the framework, as shown in Figure 4, five can be classified as mandated arrangements that support freestanding improvements (I.C.) and one as an enabled arrangement that supports freestanding improvements (II.C.). For example, in the Wayne ISD and EIC-South arrangements (Yin, 1981) it is the arrangement itself which is mandated by the respective state legislatures to provide improvement support services identified primarily by the participating LEAs. Similarly, although the three Boston Pairings (TDR, 1981) are part of a larger desegregation improvement mandate, the Pairings themselves were given the global purpose of improving excellence and equity, with the specific improvement efforts to be jointly determined by the Pairing partners. As for the NCEBOCS arrangement (Yin, 1981), it is enabled through permissive state legislation, but again the particular services are jointly determined by members.

Thus, the earlier Cates, Hood, and McKibbin (1981) findings and conclusion must be altered to include these two policy options as actively employed rather than simply potential options. The new conclusion is reinforced by the fact that each of the IOAs in sub-group I.C. and II.C. is only one of a larger number of like arrangements within their respective states or cities. In addition, based on the Wayne ISD, EIC-South, and NCEBOCS cases, each of which is drawn from a different state, it seems likely the cooperative Regional Services Agencies legislatively required or permitted in 16 other states may fall into one of these two categories.

At the same time, the addition of the case study IOAs in the framework reinforces another Cates, Hood, and McKibbin conclusion: namely, that most IOAs are established in response to some external requirement or enablement for either the IOA itself or the improvement or both.

B. Comparisons of IOA Characteristics

This section presents summary comparisons of core characteristics found in the 11 IOAs examined in the five case studies and in the seven types of IOAs identified in the exploratory study (Table 11). The comparative framework is the one Cates, Hood, and McKibbin (1981) used to compare characteristics of the IOA types. Included in the framework are five dimensions (history, context, structure, operations, and outputs) and the relational properties associated with each dimension. The 11* IOA case studies were first typed according to the classification system

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* For this comparison, the Eastern State and Midwestern State cases (Havelock, 1981) were each treated as a single arrangement. Although some interesting variations among the sub-sites in each case may be lost, the core characteristics appear to be consistent across each set of sub-sites.

Figure 4. Classification of IOAs

LEGAL STATUS OF IMPROVEMENT EFFORT	LEGAL STATUS OF ARRANGEMENT			
		I. MANDATED	II. ENABLED	III. FREESTANDING
	A. MANDATED	I.A. CHM-8 e.g., Consolidated Application Cooperatives	II.A. CHM-32 e.g., Special Education Corsortia	III.A. CHM-4 AB65 Consortium* e.g., Proficiency Assessment Consortia
	B. ENABLED	I.B. CHM-27 e.g., Teacher Corps	II.B. CHM-12 e.g., School Resource Centers, CSIP Consortia	III.B. CHM-6 e.g., Basic Skills National Technical Assistance Consortia
	C. FREESTANDING	I.C. Wayne ISD EIC South Harris-A Dunfey-B Massachusetts C CHM-0	II.C. NCEBOCS CMK-0	III.C. Eastern State Eastern Private Midwestern State Industry-Education Council CHM-14* e.g., Staff Development Consortia

CHM = Cates, Hood, and McKibbin study

* These two IOAs were identified and included in the 103 exploratory study arrangements.

Table 11. Comparisons of IOA Characteristics Across Studies

		A. YIN			B. HAVELOCK			C. IDR		
		WAYNE ISD	ETC-SOUTH	NCEBOCS	EASTERN STATE	EASTERN PRIVATE	MIDWESTERN STATE	HARRIS-A	DUNFEY-B	MASSACHUSETTS-C
		TYPE OF IOA (3 Total)			TYPE OF IOA (3 Total)			TYPE OF IOA (3 Total)		
		I. Mandated	I. Mandated	II. Enabled	III. Freestanding	III. Freestanding	III. Freestanding	I. Mandated	I. Mandated	I. Mandated
DIMENSIONS	RELATIONAL PROPERTIES	C.Freestanding Improvement	C.Freestanding Improvement	C.Freestanding Improvement	C.Freestanding Improvement	C.Freestanding Improvement	C.Freestanding Improvement	C.Freestanding Improvement	C.Freestanding Improvement	C.Freestanding Improvement
HISTORY	Circumstances th[illegible]led to IOA	State legislation	State legislation	State legislation	Current IOAs: Member organizations (Original IOAs: primarily members, some Federal $$)	Current IOA: Member organizations (Original IOA: Foundation)	Current IOA: Member organizations (Original IOA:Foundation & member organizations)	Federal court order State legislation	Federal court order State legislation	Federal court order State legislation
	Predictions	Enduring	Enduring	Enduring?	Enduring	Enduring	Enduring	Enduring	Enduring	Enduring
CONTEXT	Cooperative Environment: support for collaboration external to IOA member organizations	High	High	Low	High ?	Medium-Low	High	Medium-low	Medium-low	Medium-low
	Resource Availability:resource sources external to member organizations	High	High	Medium	High	High	Medium	High	High	High
STRUCTURE	Types of Coordinating Mechanisms	Designated Coordinating Agency/Agent (DCA/A) Governing Board Multiple IOA staff Corporate	DCA/A Governing Board Multiple IOA staff Corporate	DCA/A Governing Board Advisory Council Multiple IOA staff Corporate	Multiple DCA/A Advisory Committee Multiple IOA staff Multi-level Network	DCA/A Multiple IOA staff Alliance	Multiple DCA/A Advisory committee Multiple IOA staff Alliance/ Federation	Multiple DCA/A Advisory committees Multiple IOA staff Alliance	Multiple DCA/A Advisory committees Multiple IOA staff Alliance	Multiple DCA/A Advisory committees Multiple IOA staff Alliance
	Intensity: size of investment required for member participation	Low $ High DCA staff time Medium-low staff	Low $ High DCA staff time Medium-low staff	Low $ High DCA staff time Low staff	Low $ High DCA staff Medium-low DEA staff time	Low $ High DCA staff time Low LEA staff time	Low $ High DCA staff time Medium other staff time	Low $ High DCA staff time; Medium-low other staff time	Low $ High DCA staff time; Medium-low other staff time	Low $ High DCA staff time; Medium-low other staff time
	Reciprocity: extent of mutual agreement about bases and conditions of exchange	High	High	Low	High	High	High	Medium-low	Medium-low	Medium-low
	Standardization: extent to which units and procedures for exchange are fixed	Medium-high Informal	Medium-high Informal	Low	Medium-high	Low	Medium	High	High	High
	Degree of Coupling: levels at which IOA linkages occur; multiplexity of ties among members	High	High	Medium-low	High	Medium	High	Medium-low	Medium-high	Medium-high
OPERATIONS	Intensity: frequency of interaction among members	High	High	Medium-low	Medium-high	Medium-high	Medium-high	Medium	Medium	Medium
	Reciprocity: directions of exchange	Bilateral Unilateral	Multilateral Unilateral	Bilateral Unilateral ?	Multilateral	Multilateral	Multilateral	Bilateral	Unilateral	Unilateral
OUTPUTS	Direct outputs to members and clients	Products; Services; Activities; Information; Mandate Corporation	Products; Services; Activities; Information; Mandate Corporation	Products Services Activities Information	Products Services Activities	Products Services Activities	Products Services Activities	Services Activities Mandate compliance	Services Activities Mandate compliance	Services Activities Mandate compliance

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Table 11. Contd.

DIMENSIONS	RELATIONAL PROPERTIES	D. MCKIBBIN	E. CATES	F. CATES, HOOD, & MCKIBBIN						
		AH 65 CONSORTIUM	IEC	TYPE OF IOA (103 Total)						
		TYPE OF IOA - I	TYPE OF IOA - I	I. Mandated IOA (35)		II. Enabled IOA (44)		III. Freestanding IOA (24)		
		III. Freestanding	III. Freestanding							
		A. Mandated Improvement	C. Freestanding Improvement	A. (8) Mandated Improvement	B. (27) Enabled Improvement	A. (32) Mandated Improvement	B. (12) Enabled Improvement	A. (4) Mandated Improvement	B. (6) Enabled Improvement	C. (14) Freestanding Improvement
HISTORY	Circumstances that led to IOA	State legislation	Member organizations	State program and requirement	Federal & state programs Foundations, businesses	Federal & state programs and legislation	Federal & state programs	State legislation	Federal program	Member organizations
	Predictions	Enduring	Enduring	Enduring	Transitory ?	Enduring	Transitory ?	Enduring	Transitory	Transitory
CONTEXT	Cooperative Environment: support for collaboration external to IOA member organizations	High	High	High	High	High	High	High	High	High
	Resource Availability: resource sources external to member organizations	High	High	High	High	High	High	High	High	High
STRUCTURE	Types of Coordinating Mechanisms	DCA/A Steering committee Alliance	DCA/A Steering committee Alliance/ Federation	DCA/A Advisory committees Multiple IOA staff Alliance	DCA/A Advisory committees Policy board Multiple IOA staff Alliance/ Network	DCA/A; Advisory committees; Steering committees; Joint powers board; Multiple IOA staff; Alliance/Corporate	DCA/A Rotating chair Policy board Advisory committee Alliance	DCA/A Steering committee Alliance	DCA/A Steering committee Alliance	DCA/A Steering committee Rotating chair Alliance
	Intensity: size of investment required for member participation	Low $ High DCA staff time; High other staff time	Low $ High DCA staff time; Medium-low other staff time	Low $ High-medium staff time	Low $ High staff time	Low $ High staff time	Low $ Medium staff time	Low $ High staff time	Low $ Medium-low staff time	Low $ Low staff time
	Reciprocity: extent of mutual agreement about bases and conditions of exchange	High	High	High	High	High	High	High	High	High
	Standardization: extent to which units and procedures for exchange are fixed	Medium-high	Medium-high	Medium-high	Medium-high	High	Medium-high	Medium-high	Medium	Medium
	Degree of Coupling: levels at which IOA linkages occur; multiplexity of ties among members	High	High-medium	High	High	High	High	High	Medium-low	Medium-low
OPERATIONS	Intensity: frequency of interaction among members	High	Medium	High-medium	Medium-high	High	High-medium	High	Medium-low	Medium-low
	Reciprocity: directions of exchange	Multilateral	Multilateral	Multilateral	Multilateral	Multilateral	Multilateral	Multilateral	Multilateral	Multilateral
OUTPUTS	Direct outputs to members and clients	Products Services Activities Mandate compliance	Products Services Activities	Services Activities Mandate compliance	Services Activities	Services Activities Mandate compliance	Services Activities	Products Services Activities Mandate compliance	Products Services	Activities Services

(e.g., mandated IOA, mandated improvement) and then examined for the characteristics. The comparisons of the seven types of IOAs were drawn from detailed descriptions of each IOA that were included as part of the exploratory study. By extending the comparisons of the IOA types to include the case study IOAs, it is possible to begin filling in the broad exploratory "outline map" of IOAs, as represented by the original comparisons, with more specific information.

As Table 11 shows, a single ordered code (high, medium, low) is used wherever possible to simplify comparisons across the studies. Distinctions among the three levels are explained in the discussion of each dimension and property, as are the meanings and distinctions of the nominal codes. In most cells, a single label has been used to characterize the IOA or IOAs being compared within that cell. However, in some instances there was sufficient range on a given property that a dual coding seemed appropriate (e.g., high-medium); where this occurs, the first word indicates at least a slightly predominant tendency in that direction (e.g., medium-high, high-medium, low-medium).

Two points should be emphasized in advance of the discussions. The first is that the focus is on the core characteristics of the IOA or IOA type and variation across or between the cells rather than on details and variation within the IOA or types. The intent is to give an overall picture or sense of each IOA or type rather than to impart details about individual arrangements.

The second point is that these are "soft" rather than "hard" comparisons. That is, the rating in each cell represents an overall perceptual assessment of the several sources of data associated with each property for each IOA or type; it is not based on consistently "hard" quantitative data. For example, the rating of structural intensity--the size of resource investment required for member participation--is an assessment of the cumulative investment of two kinds of resources, money and staff time. Although some data was available about the amount of member dollar contributions to most of the IOAs and data about most IOA budgets, no attempt was made to do a quantitative analysis about the proportion of the total member budget that the contribution represented. Similarly, there was data about the number of regular IOA meetings and activities, but little data from all member organizations about the amount and proportion of total staff time spent in IOA-related work (e.g., amount and proportion of time spent by organizational representative; total number and proportion of staff members involved in various phases of IOA work and activities).

As a result, generalizability of the comparisons is limited. Nonetheless, the comparisons are useful in providing an additional map of the several IOA types. In addition, distinctions across the studies and the patterns across the types can suggest questions to be raised in future research.

History

Circumstances That Led to the IOA. Although each IOA included in the six studies has a different history of particular contacts, events,

and procedures leading to its formation, most have in common substantial prior contacts among all or most of the member organizations. In most instances, the members have had a variety of relationships and interactions ranging from informal individual contacts to formal organizational relationships in one or more other IOAs. In addition, these contacts, in the aggregate for each IOA, often have continued for a long period of time--enduring among members of some IOAs over a period of 20 years and in one instance--the Eastern Private case--for 40 years. With the exception of the Eastern Private IOA involving an IHE and LEAs, most longer-term relationships have been among the school districts and regional service agencies (e.g., a county office of education, an intermediate service district) within a shared service area. The shortest-term pre-IOA contacts and relationships appear to occur in IOAs involving educational agencies and private organizations such as business and industry.

Note first that across the case studies, six of the IOAs were initiated either wholly or in part in response to some form of state legislation* and 36 of the 103 IOAs in the Cates, Hood, and McKibbin study (Cells II.A., II.A.) were so influenced. Again, considering the larger number of IOAs represented by the Wayne ISD, EIC-South, and NCEBOCS arrangements, this suggests that state legislation specifically influencing collaborative arrangements has been an even stronger influence for creating collaborative efforts than previously recognized. These examples of state level influence taken together with the state level programmatic influence (usually through the SEA) identified in cells I.A., I.B., II.A. and II.C. under Cates, Hood, and McKibbin also indicate a very active and often long-term state level interest in using collaboration to support school improvement.

In contrast the three** freestanding case study IOAs--Eastern State, Eastern Private, and Midwestern State (Havelock, 1981)--suggest little addition to the overall number of freestanding arrangements supporting improvements (Cell III.C. under Cates, Hood and McKibbin) even when the Eastern State and Midwestern State sub-sites are taken into account. Moreover, as the Table indicates, all three of these IOAs had some external support at the outset of their collaborations although they all were primarily self supporting at the time of the study.

That these three, now freestanding, arrangements have survived withdrawal of external support becomes important in a final, primarily speculative historical comparison about whether different types of IOAs are likely to be enduring or transitory. First, note that all the case study IOAs are expected to continue. This judgment is based on several factors. First, all of the case study IOAs were selected in part precisely because they had continued over several years and showed no immediate signs of dissolving. Thus, they might more logically be expected to continue indefinitely than those in the larger pool identified in the exploratory

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* The AB 65 Consortium is counted in the exploratory study (Cates, McKibbin, and Hood, 1981) under cell III.A.

** The IEC arrangement also is included among the 130 IOAs in the exploratory study (Cell III.C.).

study. Second, the five mandated IOAs (Wayne ISD, EIC-South, and the three Boston Pairings) would obviously be expected to continue at some level for as long as the mandate continued. However, even though the respective study investigators found that each showed signs of being or becoming institutionalized there is no clear indication that any would survive the withdrawal of the mandate and supporting funds. In only two instances were any questions (noted with a question mark) raised about the IOA continuation; NCEBOCS (Yin, 1981) and Eastern Private (Havelock, 1981). For the NCEBOCS arrangement, some potentially important difficulties noted were the need to rely almost exclusively on member fees for services (1) where competitive services were available from other sources, including other BOCS in the state or within some of the LEAs themselves and (2) where strong attitudes about the local autonomy of LEAs have created and sustained misgivings about any state authorized agencies outside the LEAs. In the Eastern Private IOA, the difficulties were attributed to a lack of stable member participation (beyond the seven long-term core LEA members), and to lack of a strong commitment by the IHE (due in part to an orientation by a majority of faculty toward teaching and research rather than service and a reward system favoring research). As slack resources diminished, there was some question about how long the member organizations would continue to support an arrangement that did not appear to involve core concerns or interests of the members.

These difficulties notwithstanding, the predicted continuation of IOA cases with enabled or freestanding IOAs supporting freestanding improvements is in contrast to the transitory estimate for similar arrangements in the exploratory study. The judgment that the IOA types I.B., II.B., and III.B (of the Cates, Hood, McKibbin columns) were likely to be transitory was based on an assumption that where either or both the improvement and IOA were supported primarily by external funds, neither would survive withdrawal of the external support, especially since few, if any, such externally funded efforts make any provision for systematically reducing external funds and increasing member contributions as a means of continuing the collaborative effort at the end of the specified funding period. However, the contrast of these case study IOAs that have survived the ending of original external support, especially Eastern State and Midwestern State, suggest a stronger possibility for continuation beyond external support. In addition, four recent studies (Hood, 1982; Cates, 1982; Hering, 1982; McKibbin, 1982) have identified a number of instances where organizations involved in externally funded collaborative improvement efforts (e.g., Teacher Centers) are making concentrated efforts to continue those programs in spite of the reduction or elimination of the supporting state or federal funds. Although it does seem likely that more such IOAs would cease than continue, clearly the end of outside money does not necessarily predict the end of the collaborative effort. The most important aspect of the Eastern State, Eastern Private, and Midwestern State (Havelock) may be in demonstrating this fact and in identifying the key features needed to make the transition.

One final note about the enduring versus transitory labels. It is important to emphasize that "enduring" or "institutionalized" does not necessarily mean "good" and "transitory" does not necessarily mean "bad". They simply reflect the characteristics that seem to contribute to longer versus shorter working relationships.

Context

Cooperative Environment: Support for Collaboration External to IOA Member Organizations. The importance of this property becomes apparent when the rating for each case study IOA is related to the overall positive or negative ratings given to that IOA by the case study investigators. Where the ratings are high the IOAs were judged to be largely successful and there were no real concerns about their continuation. However, where the ratings are low or medium to low, a number of problems were identified. For example, declining membership and member support in the NCEBOCS and Eastern Private Arrangements caused consistent difficulties in achieving a genuinely sharing collaboration. Although other factors also contribute to IOA difficulties (e.g., structural rigidity in the Boston Pairings), the nature of the larger environment does seem to have an important influence on the ease with which individual cooperative efforts can be initiated and sustained.

The most clearly visible general cooperative environment was in the Cates, Hood, and McKibbin study in California. Although there was variation across the 13 county study area (defined by the 13 counties in the Greater San Francisco Bay Area) that would also be expected across the state, the investigators found the general environment to be highly supportive of collaboration as an improvement support mechanism. One essential contributing factor was the emphasis that state legislation and the California State Department of Education (CSDE) have placed on collaboration in the numerous state school improvement programs. This emphasis reflected a consistently stated view by CSDE personnel that the most effective improvement efforts will arise from shared knowledge and other resources at the local level (Cates, McKibbin, and Hart, 1980). State-sponsored programs involving IOAs occurred in all but two of the seven IOA sub-groups in that study. In addition, there were as many state programs identified as there were federal programs (seven each), and there were almost twice as many arrangements associated with the state programs (53) as there were with federal programs (30). Slightly over half of the 103 arrangements were involved with state programs.*

The activities and accomplishments of these and other collaborative efforts were frequently highlighted in CSDE newsletters and press releases related to the various programs. Perhaps the most visible sign of support was the establishment of a Consortia Support Unit within the CSDE.** Although the unit's services were specifically targeted to consortia supporting the California School Improvement Program (II.B.), the existence of such an office underscored the general CSDE support for collaboration.

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* Although both state and federal programs support improvement efforts in II.A., the IOA enablement was associated with the state program.

** It is not yet clear whether the Consortia Support Unit will continue as a special unit under the new State Superintendent's administration. However, the new Superintendent has indicated he favors collaborative efforts.

In addition to this specific CSDE emphasis on collaboration, there are several statewide support networks with which numerous IOAs are affiliated. For example, there is a strong quasi-formal network among directors of the state-mandated Consolidated Applications Cooperatives (I.A.) and a growing informal network among School Improvement Consortia (II.B.) In addition, there is an active quasi-formal statewide staff development network that includes directors/coordinators of many IOAs, as well as LEA personnel responsible for staff development, and IHE staff who specialize in staff development. Thus, this supportive environment includes: (1) a clearly apparent positive attitude by the SEA which is backed up with (2) tangible monetary and programmatic support and with (3) rewards of positive public recognition, all of which is reinforced by a (4) substructure of personal and organizational contacts and networks outside the individual IOAs.

Resource Availability: Resource Sources External to Member Organizations. Here the emphasis is on the availability of resources outside the IOA, not whether the members actually use the available resources. Included as external resources would be IHEs not involved in the IOA, services from state or intermediate agencies also not directly part of the IOA (e.g., the SEA, a state library, a county office of education, educational R&D agencies, or federal and state educational programs available to member organizations.)

Across the six studies, all but two IOAs were considered to have high resource availability. The two IOAs rated medium--NCEBOCS and Midwestern State--were so rated because of the member's geographic distance from the other resources. In the case of NCEBOCS, the distance between most members and the NCEBOCS itself is identified as one dysfunctional outcome which reduces members' in-person use of services and which potentially contributes to members' less-than-enthusiastic support of the IOA. In contrast, the fact that members of one Midwestern State sub-site IOA (Arcadia) are isolated from other resources is cited as one contributing factor for Arcadia's dramatic success. These contrasting attributions to resource availability suggest that the level of success of an IOA has little to do with the larger pool of external resource sources than it does with other factors associated with the IOA itself and its member organizations.

Finally, there is a paradox related to resource availability and the level or scope of IOA activity that was identified in the Cates, Hood, and McKibbin study. Although the general level of resource availability was rated high for the study area as a whole, variations among the 13 counties were associated with variations in the number of IOAs in the counties. In general, the counties with larger resource pools (as reflected by population and public school enrollments) also had the larger numbers of IOAs. This tendency was found consistent with earlier findings (Hood and Blackwell, 1979) that population and school enrollment size are the most consistent predictors of general educational knowledge production, dissemination, and utilization (KPDU) activities. In other words, collaboration occurs more frequently in areas where there are greater resources and less frequently where there are fewer resources. This pattern also is implied in the context descriptions of the IOA case studies, where

across the studies there are clear differences in resource availability for the high rated IOAs and the medium rated IOAs (e.g., the differences between resources available to the Boston Pairings partners and the NCEBOCS members in northern Colorado). Since one purpose of collaboration is to extend or multiply scarce resources, the pattern emphasizes a discrepancy between potentially high levels of resource need among potential IOA members and potentially low levels of resource extending collaboration among those organizations. This discrepancy raises an important policy question: How can collaboration be fostered in areas where there appears to be the least "natural" tendency for collaboration?

Structure

Types of Coordinating Structures and Mechanisms. By definition almost all the IOA structures in these six studies can be classified as alliances as Whetten (1981) distinguishes among corporate, alliance, and mutual adjustment structures. That is, the IOA structures "represent efforts to coordinate autonomous organizations without the authority of a formal hierarchy" (p. 13). Within this larger structural category, there were four main variations across the six studies. By far the most predominant was what can be labelled a simple alliance in which the designated coordinating agency or agent took primary responsibility for coordinating the jointly planned and jointly implemented IOA activities. Two somewhat similar variations were the federation and the multi-tiered network structures. The federation structure (e.g., the Midwestern State statewide arrangement and the Industry-Education Council of California of which the IEC case is a part) involves the coordination of at least some activities of multiple simple alliance IOAs that have clearly shared purposes and objectives. A multi-tiered network structure (e.g., the overall Eastern State arrangement) represents a more centralized structure in which some activities of the second level IOAs are supervised as well as coordinated by the umbrella IOA, itself composed of representatives of its member IOAs. Finally, there was what can be called the corporate alliance. In this structure, the IOA, although collaboratively based and governed, looks and may operate like an independent organization (e.g., Wayne ISD, EIC South, some special education consortia operating under a joint powers agreement) that provides services to rather than with its members.

An important finding of the cross-study synthesis is that the IOA structure per se appears to have little or no influence on the level of IOA success. Thus, the choice of which structure is most appropriate for an IOA appears to be determined only by the preference of the member organizations or by the mandating or enabling agency.

In terms of coordinating mechanisms, the IOAs in all the studies were uniform in at least two regards. First, one member agency served as the designated coordinating agency (DCA) to administer IOA fiscal matters and/or to coordinate the joint improvement efforts. In a few two-member IOAs (e.g., the Boston Pairings and Teacher Corps projects located in Cell I.B. under Cates, McKibbin and Hood) each member served as its own DCA for fiscal matters with each having its own budget and IOA-related program or project coordinator. In these instances the separate budget and

coordinator were required by the externally designed program plan to provide parity between the organizations. Other instances of multiple DCAs were associated with the Eastern State network and with the Midwestern State statewide federation.

Second, without exception in the case studies, there was a coordinator or director for the arrangement, in most instances a staff member in the DCA. A few exceptions occured in the exploratory study where the coordinator was also the elected chairperson of the steering committee and the chair rotated each year (II.B., III.C.). Where the arrangement and/or the improvement was mandated or enabled, there was more likely to be a full or major time coordinator and at least one additional professional staff member assigned to the IOA.

It was also especially clear in the case studies that the coordinator's position was often critical in all aspects of IOA development and continuation. In most instances, the coordinator played two simultaneous roles--leader and linking agent. In the early phases of development, the coordinator often served as a catalytic leader, initiating contacts and stimulating interest and action on the part of member organizations. In later phases, leadership is likely to involve more of a system management role. The linking agent role is very much like the "superlinker," described by Butler and Paisley (1978), who performs most or all of the functions of these modal linking roles: process helper, resource finder, solution giver.

Also common to all IOAs was some form of committee which had major responsibility for decisions about IOA efforts. In addition, many IOAs had both a decision-making committee and one or more advisory committees. The multiple advisory committees tended to be associated with IOAs that operate under externally designed plans and requirements (e.g., Boston Pairings) although some freestanding arrangements (Eastern State, Midwestern State) also had multiple committees. The externally required multiple committees were intended to insure involvement in the improvement effort by those to whom it is targeted (e.g., teachers in Teacher Centers) or to generate involvement of additional segments of the school community (e.g., parents in the Boston Pairings and in special education consortia).

Intensity: Size of Resource Investment Required for Member Participation. The two most consistently apparent resources contributed by members were money to support coordination and implementation of IOA efforts and staff time to coordinate and participate in IOA activities. Although the amount of annual member contributions ranged from a few hundred dollars to more than $40,000 (for one member), the proportion generally appeared to be quite low when compared to a member's total organizational budget--usually well under 10 percent of that total. In addition, where externally provided funds were in effect the source of member contributions (e.g., I.A., I.B., II.A., II.B., III.B. under Cates, Hood, and McKibbin; the Boston Pairings) the contributions did not come from the members' regular operating budgets. Finally, in two arrangements --Wayne ISD and EIC-South--member organizations rarely had to pay for the services provided although individuals had to pay for course fees associated with some workshops.

In contrast, the costs and amount of staff time required to carry out IOA activities appeared to be a potentially high investment that often was not calculated as a direct IOA cost. For example, salary costs for the IOA coordinator and other IOA staff, and for representatives from member organizations typically were covered by their respective organizations. They were, in effect, in-kind contributions which often did not appear as part of the IOA budget and did not appear to be clearly recognized by member organizations as an IOA cost.

The high amount of time is suggested by the fulltime or major time coordinator and often multiple IOA staff in all but two of the case studies and in three of the exploratory sub-groups. In addition, across all six studies, there were often several staff from each member organization actively and regularly engaged in IOA-related work, though not necessarily simultaneously. For example, there was usually an official representative from each organization who participated in the IOA governing body. Often one or more additional representatives served on an IOA advisory committee or committees. In addition to the time these staff spent in regularly scheduled IOA meetings, they also spent time in preparation, communication, and additional assignments such as task forces for special IOA projects and activities. With the exception of fulltime and most major time coordinators, IOA assignments were usually additions to the staff members' regular responsibilities.

Overall, the high-intensity arrangements tended to require regular weekly, sometimes daily, involvement of one or more staff members. In addition, such involvement tended to require fairly frequent extra time (i.e., unpaid or volunteer overtime) by at least one organizational staff member to accomplish IOA activities (e.g., special task forces). Not surprisingly, this level of intensity was associated mostly with IOAs supporting mandated improvement so that IOA efforts were essential to IOA members.

Medium rating in this area indicates that there were multiple organizational participants and extra staff time was also required. However, the extra time and participation for IOA work appeared to be less frequent and more sporadic rather than regular. A low rating reflects little regular additional time required beyond regular IOA meetings and little regular additional staff involvement other than the official representative. Among the case studies, the only two low ratings were associated with the IOAs which were least stable in terms of continuation.

Reciprocity: Extent of Mutual Agreement About Bases and Conditions of Exchange. The predominantly high rating on this property was derived indirectly from two features that most of the IOAs had in common. First was the fact that most of the arrangements were involved in some external requirement or enablement for either the improvement or the arrangement or both. For these IOAs, the mandating or enabling agency usually specified at least the minimum bases and conditions for the exchange (e.g., the nature of the improvement, the basic features or structure of a supporting IOA, the types of activities or tasks to be carried out as part of the improvement and/or the arrangement). Except in IOAs in which both the improvement and the arrangement were mandated, members were voluntary participants in either the improvement or the arrangement or both. Under

these circumstances, IOA participation implied considerable reciprocity among members. The second feature was the continued voluntary IOA participation by most members, often over an extended period of time.

The low rating for NCEBOCS reflects the fact that LEA members had rejected most of the planned agenda for 1980, which indicated disagreement, and on the generally declining level of use of NCEBOCS services. The medium to low rating for the Boston Pairings reflects the overall difficulties they had in negotiating satisfactory bargains and exchanges over the first two years (low) and also indicates the improved circumstances noted during the following three years (medium).

Standardization: Extent to Which Units and Procedures for Exchange are Fixed. For the medium to high ratings there appeared to be a roughly even division between units and procedures that were clearly fixed for the duration of the agreement and units and procedures that were open to negotiation or renegotiation by member organizations. For example, the amount of external funding, the limits of member dollar or proportional contribution, and the basic decision-making structures and procedures were among the items generally standardized by the external agency or by agreement among members. Changes in these items appeared to be made only rarely and only with approval by the governing body (or external agency). Other items such as the number and specific topics of workshops or inservice sessions generally could be, and often were, established and revised at the discretion of IOA members. The four high ratings indicate that an estimated 60 percent or more of the units and procedures were fixed, leaving members with little flexibility to adapt to changing needs or conditions. In fact, in the Boston Pairings the rigid externally imposed procedures were judged to be a major block to more complete cooperative and high level functioning. Low standardization is an estimated 40 percent or less fixed items. The low rating for NCEBOCS again reflects the lack of continuity caused by rejection of plans and by declining use, both of which make it difficult to maintain stable services and interactions.

Degree of Coupling: Levels at Which IOA Linkages Occur; Multiplexity of Other Ties Among Members. The degree of coupling refers both to the level of interdependence among IOA members for carrying out the particular IOA effort and to the larger or broader range of connections among members that lend support to the particular IOA and to collaborative efforts in general among the IOA members. A high rating indicates that linkages among the IOA members typically occur at several organizational levels for the particular IOA and also that IOA members have numerous other current formal and informal ties. Note that for multi-level IOA linkages, the connections or interactions may occur among different levels of organizational representatives at different times for different purposes. For example, official member representatives may be at the level of superintendent or associate superintendent; advisory committee members might include other mid-level administrators or teachers or parents (or all of these); and the IOA effort might include services or activities (e.g., staff development) targeted or available to member representatives at one or more of these levels. Once again the high ratings for the case study IOAs are associated with the more successful arrangements. For the high rated sub-groups in the exploratory study the high rating simply

indicates a fairly sizeable number of connections (multi-level and multiplexity); no judgments about success were made. Likewise the medium to low sub-group ratings are simply descriptive and give no clear reflection of success levels.

The dual ratings for the other case study IOAs indicate differences in the two indicators (levels and multiplexity). For example, there are a moderate number of multilevel linkages in that LEA superintendents form the governing body and services are available to, though not necessarily targeted to, all staff levels in member organizations. On the other hand, there appear to be few other ties among member organizations.

Intensity: Frequency of Interaction Among Members. "Interaction" here denotes formal and informal, coordinated and uncoordinated exchanges among members. A high rating indicates that interaction was both regular and frequent usually with daily contacts between the coordinating agency and different members and often including daily interaction among different members.

A medium rating indicates that interaction ranged from regular bimonthly to weekly contacts between members other than the coordinating agency. This rating also included regular weekly and sometimes daily contact between the coordinating agency and other members. A low rating indicates that interaction about collaborative efforts appeared to occur mostly in regularly scheduled IOA meetings which were held monthly or less.

Reciprocity: Directions of Exchange. Note first that the differentiation apparent across the case study IOAs as opposed to the single multilateral label for the exploratory sub-groups reflects the more detailed information available in the case studies. The dual codings for Wayne ISD, EIC South and NCEBOCS are related to differences in the nature of the KU services intensively examined in the study. The bilateral and multilateral exchanges tend to occur more in the staff development workshops and seminars and the unilateral exchanges occuring primarily from the REA to the user in technical assistance and information services. For the unilateral exchanges in the Boston Pairings, the flow was primarily from the IHE to the schools.

Outputs

Direct Outputs to Members and Clients. What are labelled here as outputs, Yin referred to as goods and services outcomes (excluding mandate compliance): products (e.g., handbooks, newsletters, reports); services (e.g., programmatic technical assistance); and activities (e.g., staff development workshops, inservice training sessions). The important point here is the consistent mix of outputs which indirectly reflects the variety or mix of activities that Havelock found to be very important to development of IOAs. It also reflects a variety of objectives, though not necessarily the essential diversity of objectives that Havelock also found important. Where the improvement effort or IOA membership itself is required, mandate compliance is an important output and outcome for members.

C. Synthesis of Key Findings

In this section, two sets of findings are highlighted. The first set includes six broad or general findings derived from the synthesis which are supported by all or most of the six studies. The second set of findings focuses specifically on IOA outcomes. Here the supporting evidence is drawn primarily from the five case studies which provided greater details about outcomes and effects. These findings are organized around the outcome categories used by Havelock (power and status changes, linkage changes, etc.). Within these categories most of the important cross study outcome findings can be accounted for.

General Cross-Study Findings

Formal collaborative arrangements are widely and effectively used to support school improvement efforts. Perhaps one of the most important contributions of these six studies is to identify the potentially ubiquitous reality of formal collaboration among educational organizations. Although prior to these studies, there had been a rapid growth of interest and research on interorganization relations, most of the attention had been focused on relations among other public governmental agencies and among business and industry organizations. The common view of education organizations, especially school districts, was that they were generally isolated from one another, making few attempts or providing few opportunities to exchange or share resources except through the personal, social, usually informal, networks of personnel within the organizations. What these studies reveal is the existence of a rich, formal network of educational organizations. Through these arrangements the organizations share and exchange numerous resources to support a wide variety of school improvement efforts, ranging from the general purpose of "improvement in educational excellence and equity" (as exemplified by the Boston Pairings), to providing multiple knowledge utilization services (e.g., Wayne ISD, EIC-South, NCEBOCS), to accomplishing highly specific tasks (e.g., the AB 65 Elementary Proficiency Assessment Consortium).

The extent of the network is strongly indicated by the 103 arrangements found in the 13-county area examined in Cates, Hood, and McKibbin exploratory study and by the fact that the three REA-LEA arrangements in the Yin study are representative of multiple similar arrangements in those three states and are potentially representative of similar efforts in 16 other states where cooperative Regional Education Agencies exist. Moreover, based on an extension of the findings of the exploratory study, Cates (1981) estimated a nationwide total of 2,000-4,000 IOAs that support some form of school improvement effort.

Another aspect of the richness of the network is the multiplicity of connections among organizations in most individual arrangements. Across all six studies there are strong indications that most organizations in a given arrangement have multiple past and present linkages with many of the other members of the arrangement. These connections are both formal and informal, inter-personal and inter-organizational. Although the formal agreements for the interorganizational arrangements are usually made between or on behalf of the larger organizations as a whole, they are

typically carried out at different levels, within different sub-units, with official representation by different individuals. Thus, each arrangement may operate quite independently of the others, sometimes to the extreme that no one person in the organization is aware of the total number of IOAs in which that organization participates. Even in the absence of such an extreme situation, the findings point to an often robust, multilayered collaborative network among a core of IOA members.

Most IOAs are initiated in response to some external influence in the form of a mandate or enablement for the improvement effort or the arrangement or both. The exploratory study found that 86% of the 103 arrangements had some type of external influence, and among the 11 IOAs included in the case studies only the Industry Education Council (Cates, 1982) was established solely or predominantly with only member support for both the improvement efforts and the IOA. This finding lends additional emphasis or importance to the distinction that Yin makes between the "simple" arrangement among the organizations participating directly in the arrangement and the larger "complex" arrangement which includes the indirect participation or influence of the third party organization that sponsors or requires the "simple" collaboration. Both the Yin and the TDR studies identify some of the difficulties that can arise as a part of a "complex" arrangement.

A closer examination of this finding also suggests that state level agencies--state legislatures and SEAs--are considerably more active in encouraging collaborative efforts than had previously been identified. For example, in the exploratory study, although there were an equal number of state and federal improvement programs that could involve IOAs, there were a greater number of IOAs associated with the state programs (51) than with the federal programs (27). In California, the abundance of IOAs influenced by state programs clearly reflects the emphasis placed on collaboration by the SEA and the state legislature. In fact, virtually every state improvement program initiated over the past 10 years has specifically identified formal collaboration as one means of carrying out or participating in the program. For the most part collaboration has been encouraged rather than required whether or not the improvement itself was required. But, as described in the preceding section, the SEA has used a variety of incentives and rewards to encourage particular collaboratives and to foster a general collaborative environment. This indication of state level interest and support for collaboration also is indirectly supported in the Yin case studies of Wayne ISD and EIC-South, both of which identify at least three other state sponsored collaborative programs in addition to the particular IOAs studied and the programs they represent.

Where collaborative improvement efforts are important to the participating organizations, they can and do survive the reduction or elimination of external support or requirement. Major support for this finding comes from three of the studies. In the Havelock study, the original teacher center sites in two of the three IOA cases (Eastern State, Midwestern State) were initiated with predominant or substantial external support either from a federal program or from a foundation. Not only have the original centers survived the end of external support, they have maintained or increased their vitality, and in both instances,

additional sub-sites or centers have been established. Similarly, the NCEBOCS arrangement in the Yin study had strong federal and state support during its first eight years of operation. In spite of the difficulties in the level and quality of service attributed to sharp reduction of the external support, the arrangement had maintained its operation of a variety of KU services for at least three years at the time of the study.

A different "survival" pattern is evident in the AB 65 Elementary Proficiency Assessment Consortium. In this case it was the improvement effort that was mandated for individual districts, which then established a voluntary arrangement to assist themselves and one another in meeting the mandate. During the time of the study, the member districts had fulfilled the requirements by the deadline. So, having accomplished their original purposes and objectives, there was no external motivation or influence for the IOA to continue. However, based on the success of their previous efforts and the contributions their collaboration had made to member organizations, the members enlarged the scope of their purpose and objectives and planned to continue their joint tasks.

Finally, later studies (Cates, 1982; Hood, 1982; McKibbin, 1982) of cutbacks in federal and state education funding, found that the previously federally-supported Teacher Centers in California appear to have survived the consolidation of their categorical funds into EICA Chapter 2.

There is a wide range of workable combinations of organizations for collaborative arrangements, and no one combination seems clearly superior for school improvement or knowledge utilization purposes. The exploratory study identified 20 different combinations of organizations in the 103 IOAs found in that study. The study also found that four combinations accounted for 73% of the arrangements. These combinations were: school districts (LEAs) and county offices (which are regional educational agencies --REAs)--40%; LEAs and institutions of higher education (IHEs)--11%; LEAs and other LEAs--11%; LEAs with educational R&D agencies--11%. However, neither in the exploratory study nor the five case studies* was there any evidence to suggest that any one combination was more likely to succeed than other combinations.

The predominance of the four combinations is a logical consequence of their respective roles and relationship, especially in school improvement efforts. Most educational improvement efforts, from whatever the source, are targeted to LEAs. As school improvement (including knowledge utilization) was defined by these studies, virtually all other organizations or classes of organizations would be considered as providing support for LEA improvement efforts. Where REAs exist as part of the larger state educational system, they are required or authorized to provide LEA support. Thus, all or most of their organizational effort--programs, staffing patterns and expertise, information resources, etc.--are geared to match the support needs of districts. In addition, by virtue of their support

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* The case studies involved only two of these four combinations: LEAS and REAs (Yin, McKibbin); LEAs and IHEs (Havelock and TDR). The IEC arrangement (Cates) involved LEAs, an REA, and business, and was the only such combination in the exploratory study.

position and extensive contacts with districts, REAs are likely to have a higher level of situational knowledge about districts and schools in their respective areas. Where the REA support role is firmly fixed and accepted by LEAs, REAs are the most natural and logical source of collaboration with LEAs. Also, because REAs are part of the same system as LEAs, they also are more likely to be required to participate in mandated improvement efforts and/or IOAs with districts. At the same time the exploratory study found that REAs were the only type of organization participating with LEAs in all subcategories of collaborative arrangements. In addition, this combination was substantially more frequent than the three next highest combinations (40% as compared to 11% each for the next three). Again, these factors reflect the close role relationship and "system" partnerships of REAs and LEAs.

Both the predominance of the other three combinations and the lower level of collaboration of these combinations are reflected in their respective organizational roles and relationships. In general, school districts have common requirements, programs, basic funding sources, staffing patterns, and similar supplemental resource needs, and shared understandings of their commonalities and similarities (situational knowledge). The closer the LEAs are in geographic proximity and in shared characteristics of their student populations, the greater their specific situational knowledge of one another is likely to be. It is natural to turn to the other organizations they know best for joint efforts.

Institutions of higher education* that emphasize teacher training often have a long and well established relationship with nearby LEAs as a result of placement and supervision of student teachers, placement of their graduates, and graduate training of teachers and administrators in those LEAs. Thus, there are often numerous organizational and personal contacts between the SCDE and the districts. In addition to this traditional relationship, IHES are a stable part of the district's environment since, despite declining enrollments and decreasing or level funding, few colleges and universities or their SCDEs ever go out of business. IHEs also provide a source of concentrated external resources in the form of SCDE faculty expertise and information resources available through the larger organization. These factors explain the presence of IHEs as one of the predominant LEA collaborators. The lower level of IHE collaboration can be explained by the fact that IHEs are seldom required by either their own missions and purposes or by external agencies to provide specific improvement support or to collaborate formally with LEAs.**

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*It is almost always the school, college or department of education (SCDE) that collaborates with LEAs or other educational organizations. Although there are some notable exceptions (e.g., the participation of science and engineering departments in the Mathematics, Engineering, Science Achievement arrangements in California) it is rare that the IHE as a whole or other IHE subunits have LEA support as one of their missions or activities.

** Note that in the Boston Pairings, the mandate for improvement and for collaboration applied only to the district. The IHEs were "strongly encouraged" to participate but were not specifically required to do so.

Moreover, most LEA contacts with IHEs for specific improvement support involve faculty members as individuals with particular expertise rather than as representatives of the IHE organization. However, this situation may change if legislatures in other states follow the lead of Texas and Florida in requiring the SCDEs in state colleges and universities to provide collaborative improvement support to LEAs in order to justify maintaining their funding levels in the face of declining SCDE enrollments.

Educational R&D agencies typically have a much shorter history of contacts with LEAs, with the federally funded agencies having existed only since the mid-1960's. However, contributing to the improvement of education is their primary purpose and all or most of their resources are targeted to this end. In addition, like IHEs, they offer a source of concentrated expertise and information. Moreover, until recently they have also been a source of substantial amounts of external funds for improvement efforts, usually through their federal grants and contracts. Given their expertise, mission, funding, and associated external requirements, it is not surprising that R&D agencies are one of the predominant improvement partners with LEAs. In fact, these characteristics probably mean that R&D agencies are more dependent on LEAs than vice versa and that the R&D agencies more often initiate collaborative efforts than do LEAs.

Their lower level of collaboration can be accounted for by several factors. First there are fewer R&D agencies and they usually have a larger service area than do REAs or IHEs. In this sense, their own resources must be more carefully targeted and stretched thinner. Second, their primary mission usually is research and development rather than direct service to LEAs, which would more likely involve collaborative efforts of the kind included in these studies. Third, most of their funding comes from external sources for programs or projects defined by the external funding agency. In many instances these externally defined programs might be characterized as "solutions looking for problems" (Cohen, March, & Olsen, 1976). Many districts may have improvement interests or problems quite different than those of interest to the R&D agencies' funding source. In light of these factors, it is perhaps more surprising that R&D agencies were found to collaborate with LEAs as often as IHEs and other LEAs, both of which have longer term, stable, and well established traditional relationships.

Structure per se appears to have little influence on IOA effectiveness or outcomes. Although some structural factors (e.g., externally imposed structural rigidity in the Boston Pairings) may impede or enhance the collaborative process, there is no evidence from any of these studies that one structural form is superior to another. In particular, the level of formality seems to have little, if any, influence on the effective delivery or exchange of resources. Havelock specifically noted this in regard to the Eastern State, Eastern Private and Midwestern State arrangements.*

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* Havelock does suggest that formalization may be important when replicating a particular IOA model from one site to another when there are weak ties among members of the new IOA. The availability of a clear formula for the new arrangement may be crucial to its development. However, without further examination, it may well be that the important point is the existence of a formula for replication, not the particular structure or level of formalization.

In addition, although the KU service delivery and exchanges in the Wayne ISD and EIC-South arrangements existed within larger formal arrangements, Yin noted the absence of formal agreements for the KU services examined in these two cases. Finally, in the exploratory study the level of formal agreements ranged from highly formal joint powers agreements to quasi formal memoranda of agreements with no apparent differences in IOA operations that could be attributed to the agreements themselves.

The development and continuation of collaborative arrangements follow a natural, predictable and highly complex course, regardless of the improvement effort supported or the presence or absence of external influence on the IOA itself. Three of the six studies speak directly to this point. McKibbin's study of the AB65 Proficiency Assessment Consortium highlights the stages of development. The Havelock and TDR studies describe the development process both in their individual case studies and in the respective cross-case analyses. In the latter, both present conceptual models of IOA development and process based on the cases. The essential features of this developmental course are summarized in the implications section.

Predominant Cross-Study Outcomes

In this section, the major outcomes most consistently identified across studies are identified and discussed. For the most part the outcomes are those found in the five case studies, which examined individual IOAs in much greater detail than did the exploratory study. The outcomes are grouped in six categories which are the major categories developed by Havelock et al. for identifying specific outcomes at several levels (individual, organizational, interorganizational). These categories are equally applicable to the other studies and are particularly useful in focusing attention on improvement and knowledge utilization issues. The six outcome categories are:

- Power and status changes
- Linkage changes
- Knowledge transfer
- Capacity building, maintenance, and growth
- Practice improvement
- Institutionalization

Power and Status Changes. As Huberman, Levinson and Havelock (1981) point out, any new institutional entity, whether organizational or interorganizational, provides an opportunity for the potential shift or alteration in the existing field of individual and organizational social forces. Indeed, individuals and/or organizations often seek such changes either because the changes offer possible enhancement in standing (status) or increased ability to achieve desired goals (power).

Although numerous changes reported were associated with this category, there appeared to be no consistent pattern of changes across the studies at the individual or organizational levels. So, for example, the Havelock findings of enhanced status of LEA individuals through association with college and university faculty was not notable either in the TDR study

of LEA-IHE arrangements or in the studies involving other organizational combinations. Neither was there consistent evidence that individual organizations, or their sub-units directly involved in the IOA, substantially increased their status or power relative to other member organizations or sub-units.

The outcome that did consistently appear across the studies (though usually addressed indirectly) was that member organizations, both individually and collectively as an IOA, did increase their power to act and to achieve their goals. The difficulties of some IOAs notwithstanding, (e.g., NCEBOCS, Eastern Private, the Boston Pairings), all were judged to be largely effective in carrying out the improvement efforts agreed upon by members. Individual organizations, especially LEAs, were able to increase their access to a larger pool of resources represented in the IOA itself, as well as increasing their access to resources external to themselves and the IOA (e.g., consultants, information, training) arranged for by the IOA or available only as a result of IOA membership (e.g., new or additional federal or state funds provided only to IOA members).

Linkage Changes. Important changes in linkage were evident across all six studies. First, whether an IOA provided first time connections for all or some of the member organizations (e.g., linkages between LEAs and businesses in the IEC case) or were additions to numerous past and present ties, they provided new channels of communication, resource exchange, and interorganizational understanding. In this way, they enlarged the scope or perspective that each member organization had on its own immediate environment and on the larger environment of the IOA as a whole.

Second, in several instances the IOA itself provided or stimulated linkage opportunities for individuals or sub-units in addition to the official organizational representatives. For example, in the Arcadia Midwestern State sub-site, college faculty from other departments (e.g., math, music) participated in some center activities or taught courses there although their departments were not part of the IOA. In addition, the activities in many of the IOAs, particularly staff development workshops, were either open to or designed to include participation by a variety of LEA staff in addition to IOA representatives. These linkages increased the number and variety of ties and exchange opportunities for individuals within member organizations.

Third, in most instances, the IOAs examined were additions to numerous other IOAs existing among different sub-units and involving different individuals in many or all of the same member organizations. This was particularly apparent in the exploratory study, where it was not unusual for a core group of organizations in one IOA also to be involved in two to five other IOAs. In an extreme example, several LEA members of the AB 65 Consortium were involved in at least seven other IOAs together, and the county office of education was involved in at least seventeen other IOAs that included two or more of the AB 65 members.

Clearly, even the simplest single IOA can, and usually does, involve multiple complex ties among members which change the nature of relationships among members and strengthen their interdependencies. In addition,

the multiple IOAs increase the multiplexity of ties and interdependencies among many IOA members. Unfortunately, because the focus of the case studies was on a single IOA or related set of IOAs, the extent and effects of these multiple IOA ties could not be clearly identified or examined. Thus, it is not yet possible to see the extent to which IOAs create broader or deeper interdependencies among organizations.

Knowledge Transfer. In three of the studies (Yin, Havelock, TDR) knowledge transfer was a specific focus of investigation. Of particular interest were the amount and types of knowledge transferred. Although the other three studies were more broadly focused on school improvement, they provide both direct and indirect support for the major knowledge transfer outcomes of the first three studies.

Taken together, the six studies show that a very substantial amount of knowledge is transferred through collaborative arrangements. In addition, there is often a great diversity of content, especially in IOAs with a specfic knowledge utilization or staff development focus as shown in the Yin and Havelock cases. Moreover, there is usually a mix of activities through which the knowledge is transferred. With the exception of formal courses which are usually associated only with staff development arrangements or services, the activity mix in most IOAs in these studies includes some form of all the goods and services outcomes identified by Yin: workshops; training information and materials; educational products; phone and on-site assistance; answers to phone and in-service requests for information. The activity mix itself appears to provide a necessary redundancy for reinforcing both the knowledge content and the ties among individuals and organizations in the arrangement.

The predominant types of knowledge exchanged in the case study IOAs were situational or craft knowledge or some combination of the two. By comparison, research knowledge was rarely the focus of exchange in an IOA unless the purpose of the IOA was to conduct research (e.g., in two or three of the IOAs identified in the exploratory study) or to carry out a task that specifically required research based information (e.g., some aspects of the AB 65 Proficiency Assessment Consortium tasks). This was the case even in the three IOAs that provided information retrieval services (Wayne ISP, EIC-South, NCEBOCS). Although these services did include research based information, it was not necessarily the primary type of information provided to requestors. Craft knowledge appeared to be equally the source of responses to requests.

The very low level of research knowledge transferred is especially worth noting in the Havelock and TDR studies, both of which involved IOAs composed of IHEs and school districts. Both the studies were undertaken in part, as Havelock describes it, "because of what was seen as the unique role of the university in society as the prime generator and disseminator of knowledge." In both studies at least one indirect assumption was that as a result of this unique role, research-based knowledge would be more prevalent in these IOAs than in IOAs involving other types of educational organizations. Of the six IOAs examined in the two studies, only the Eastern Private arrangement showed any substantial focus on research knowledge. However, this emphasis was most prominent in the arrangement's

much earlier history. Its present focus is mixed, with some research-based input but with a greater emphasis on craft-validated knowledge.

The explanations given for this are twofold. First, LEA personnel are simply more interested in and more receptive to knowledge derived from or validated by experience (usually situational or craft knowledge) than knowledge explicitly based on research with little or no evidence of experience validation. In fact, the TDR study suggests that situational knowledge forms the basis of all knowledge resource exchanges and that until that the need for situational understanding is satisfied, real progress cannot be made toward exchange of craft or research knowledge.

In addition, where IHEs are the major LEA partners, the TDR study suggests that the "predominant type and focus of the University/College (i.e., research, teaching, service) affects the emphases of the Pairing project (IOA) and activities, and hence the nature and extent of knowledge flow/use for school improvement." In general, the rationale is that in IHEs with a primary, major focus on research there is less interest in serving LEAs or in participating in IOAs, fewer previous ties and less understanding of the LEAs' particular situations. These factors will cause greater difficulties in developing the IOA itself and impede the progress of the overall knowledge transfer. In contrast, IHEs with a major emphasis on service and teaching will have more prior contacts, better situational understanding of its LEA partners, and more interest in craft knowledge--all of which will make IOA development easier. But, research knowledge will be less available or less sought out by either the IHE or the LEA participants. Although this explanation is supported in part by the Clark and Guba (1977) and Lotto and Clark (1978) studies on institutions of teacher education, it also creates a Catch-22 for the use of research knowledge in IOAs involving IHEs.

Capacity Building, Maintenance and Growth. In the Havelock study from which this outcome category was drawn, "both individuals and organizations were viewed as systems requiring continuing input, throughput activity, and output to maintain themselves in some sort of steady state and to grow" (Havelock, IV, p. 188). Direct and indirect evidence from the five case studies and mostly indirect evidence from the exploratory study indicate several areas of improved or increased capacity for individuals and organizations. In addition, when IOAs are viewed as systems (as they are in the conceptual models developed in the Havelock and TDR studies) an additional set of outcomes can be identified.

For individuals--usually teachers--the IOAs provided two kinds of capacity improvement or opportunities for capacity improvement. First, they generally provided increased access to a variety of practice-relevant resources including expertise, information, training and materials. Although some level of increased access was apparent in all the studies, the most notable outcomes in this area were in IOAs that had some form of KU service or activity as one of its primary goals: namely, in the IOAs associated with the Yin study (Wayne ISD, EIC-South, NCEBOCS), the Havelock study (Midwestern State, Eastern Private, Eastern State), and in some 28 exploratory study IOAs that had staff development as their primary purpose. In spite of variation among these IOAs, it is clear that they provided individuals with considerably greater amounts and variety

in both substance and form of resources than would have otherwise been available. For individuals who actively made use of the increased resources --and again there is considerable variation across IOAs--the outcomes were generally expressed as an increased level of confidence, a sense of rejuvenation or revitalization and enthusiasm for their work, or a sense of getting back into the mainstream of professional knowledge and practice. In some instances, where several individuals from the same organization, usually a school building, had jointly participated in staff development activities, increased capacity was reflected in a new or enhanced esprit de corps among them. In other instances where IOA member representatives were responsible for planning and carrying out IOA tasks (e.g., the AB 65 Consortium and the several school improvement consortia in the exploratory study), they increased their capacity in working collaboratively.

Second, IOA staff members often were able to explore new roles and functions involved in coordinating the collaborative activities and services. For example, REA staff who moved from a direct-service consulting role to the role of IOA coordinator had an opportunity to expand their skills in group facilitation, and bargaining and negotiating, as well as their general coordinating and managing skills. Where they were responsible for providing multiple services to a simple number of districts and/or individuals, they also were able to increase the level of service and number of service contacts through the IOA. For LEA staff or IHE students who worked as IOA coordinators or staff, their new role allowed them to increase their knowledge and understanding of other educational organizations and to learn new roles and functions (e.g., consulting, providing technical assistance) involved in serving as a linking agent. In some instances (e.g., in the Yin and Havelock cases) individual involvement in the IOA either as a participant or IOA staff also served as a career development path as an LEA staff member moved to an REA position or a graduate student increased or shifted an interest in a linking agent career.

At the organizational level, as at the individual level, IOA membership generally provided increased access to resources, either through the enlarged pool of resources represented in the IOA as a whole, (e.g., a larger amount of money and staff time to donate to a common task as in the AB65 Consortium), additional external resources arranged for by the IOA (e.g., consultants from non-IOA organizations), or having a larger variety of services available from the IOA itself (e.g., the multiple KU services in the Wayne ISD and EIC South cases, the computer van in the IEC case). Active organizational participation (as opposed to nominal membership) also often reflected an increased capacity for the organization to carry out its own responsibilities or to improve the delivery of services to its own staff or constituents. For example, LEAs participating in staff development arrangements usually increased the number and variety of staff development opportunities for their teachers. For REAs, the common needs of a larger number of LEA constituents could be met more efficiently through an IOA than by providing the same service individually to LEAs. In addition, where IOA services were jointly designed and carried out by the REA and LEAs rather than by the REA alone, the services were more likely to meet the real needs of the LEAs. Thus, the REAs could simultaneously improve both the volume and relevance of their assistance capacities. For IHEs involved in the Havelock and TDR cases,

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improvements in assistance capacities were also noted and attributed to increased awareness and understandings of LEA situations and needs.

It should be noted that changes in organizational capacities were in the nature of fine tuning or improving existing capacities. There were few instances in which the changes provided a totally new capacity or involved a major, fundamental change on the part of the organizations as an outcome of IOA membership. What the TDR study specifically noted about the Boston Pairings was also applicable to the other studies--there were few instances in which organizations were interested in fundamental capacity changes. In addition, the purposes of the IOAs were usually associated with a particular, sometimes narrow, function or area of organizational service or operation rather than with the overall organization.

Practice Improvements. From one point of view, practice improvement outcomes (e.g., adoption of a new skill or procedure for teaching or administration) were disappointing across the six studies. Only in the Havelock study were practice improvements a consistently prominent outcome, but in that study the investigators emphasized that "Practice improvement was a prominent stated goal of all three IOAs and specific citings of such improvements were legion, especially at the teacher and school levels" (Havelock IV, p. 188). However, three factors can temper that disappointment. First, the major focus and primary unit of analysis of all the studies was on the IOA itself rather than the particular practice improvement effort(s) being supported by the IOA. Second, most of the IOAs included in the six studies were supporting rather than directly implementing improvement efforts by member organizations. As a result, the IOAs and their services were in an intermediate position between the problems and needs of members and the available solutions or improvements. This was particularly the case for arrangements that provided primarily KU services. As Yin pointed out: "the [KU] service itself consists of intermediate benefits (e.g., transmittal of specific pieces of information) that cannot be assessed directly in terms of their contribution to school improvements, even though the connection may be an important one" (Yin and Gwaltney, p. 98).

Third, the richly and carefully documented outcomes of the Havelock cases indicate that where practice improvement is a specific goal of the collaboration, improvements can and do occur.

From another point of view, the IOAs themselves can be seen as an important practice improvement for member organizations. For example, in virtually all instances the collaborations could be and were seen as a solution to the specific problems (e.g., needed additional or different resources). In many instances they also represented improved service delivery practices. Finally, collaboration per se as an improved problem solving strategy or practice on the part of member organizations. This improvement was particularly apparent where a core group of organizations repeatedly or simultaneously worked together for specific improvement purposes.

Institutionalization. It is useful to consider institutionalization in two ways: institutionalization outcomes of the particular IOAs;

institutionalization of the concept or practice of collaboration within member organizations. The difference is illustrated in these two questions:

- What is the likelihood that IOAs examined in the six studies will continue over a substantial period of time?
- If the particular IOAs were dissolved, would their respective member organization be likely to engage in other collaborative efforts?

In answer to the first question, all 11 IOAs examined in the five case studies were judged likely to continue, albeit with real and potential difficulties noted for the NCEBOCS (Yin) and Eastern Private (Havelock) arrangements. It should be noted that all 11 IOAs were selected in part because of their exemplary natures or reputations and because they already had been operating for several years. Thus, on the one hand, this finding is not surprising and might be viewed as having moderate or limited value.

On the other hand, the finding has considerable value in demonstrating the common features that contribute to continuation and institutionalization across different types of IOAs established for different purposes, having different structures, operations, and different sources of support. In general, the causes of continuation and institutionalization that were identified from the three LEA-IHE cases in Havelock's study are supported by the findings in the other eight cases. These causes can be summarized as follows:

- Causes of Continuation

  Rewards and benefits experienced by members and strengthened organizational ties

  Continuing sense that real needs are being served

  Degree of competition from non-IOA sources.

- Causes of Institutionalization

  Sustained support from member organizations as reflected in dollars, attitudes and behaviors

  Continuing and varied activities that mutually engage staff in member organizations

  Strong leadership continuity.

The difficulties observed in the NCEBOCS and Eastern Private arrangements lend further support to these features. For example, in both IOAs there were important questions raised about whether they were serving real fundamental needs of more than a few of their member organizations. In addition, the resources available from the IOAs were equally available, and often of equal or greater stability or quality. Finally, sustained support appeared to come only from a few member organizations rather than from the general full membership.

The answer to the second question is also affirmative: It is likely that, in most instances, IOA members would collaborate again if the existing arrangements were dissolved. Although this finding is speculative, it is more broadly based in that it draws on the exploratory study findings about 103 arrangements as well as the five case studies. The key point here is the extent to which IOA member organizations engage in other collaborative efforts and the degree of support for collaboration in the general environment as well as in member organizations. With the exception of NCEBOCS and the Eastern Private arrangements, there was evidence that the case study IOAs and the exploratory study IOAs were only one of several collaborative efforts of members as previously discussed under Degree of Coupling: multiplexity of ties among IOA members (pp. 4.13-4.14). Also, again with NCEBOCS and Eastern Private excepted, the general collaborative environments of the IOAs were given high or medium ratings indicating substantial to moderate external support or encouragement for cooperation (see pp. 4.8-4.9). In the long term, it may be more important for educational organizations to maintain positive attitudes about collaboration and to repeat effective collaborative behaviors than for the particular IOAs to be continued. The evidence from these studies indicates that such attitudes and probable behaviors do exist in several different states among numerous organizations and for a variety of improvement purposes.

V. IMPLICATIONS

Two conclusions and three sets of implications are derived from the synthesis findings. The two conclusions are broad, general statements which "set the stage" for the following three sets. The first set of implications apply primarily to simple arrangements. That is, they specifically refer to the design, implementation, and coordination of arrangements by the organizations directly and actively participating in IOAs. The second set of implications apply to complex arrangements that include some type of external-party support or participation. These implications highlight guidelines for external involvement. Suggestions for further research are presented in the third set of implications.

A. Conclusions

1. There already exists an extensive, multi-faceted and effective network of educational organizations engaged in a broad variety of collaborative school improvement efforts. The synthesis findings clearly suggest a potential ubiquity of interorganizational arrangements employed in many different settings, involving numerous types of educational and other organizations, for many purposes. The finding also indicate that numerous, varied, and substantial benefits and results can accrue from the arrangements to participating individuals, sub-units, and organizations. Perhaps most important, the findings indicate that LEAs are the most widely and actively involved in IOAs and consequently appear to derive the most benefit from collaboration.

2. The concept or practice of formal collaboration as a strategy to support school improvement appears to be well established among educational organizations. This conclusion is derived from findings about the extensive existing network, the multiplexity of past and present ties, and the generally positive environment for collaboration. Its importance is in indicating that educational organizations (again, especially school districts) are responsive to opportunities to collaborate, whether the opportunity is initiated by member organizations themselves or by an external party. It is also important in indicating the likelihood that IOA members will continue useful and effective externally-initiated efforts when external support is reduced or withdrawn.

B. Implications for Simple Arrangements

These implications are intended as guidelines for establishing and operating interorganizational arrangements. They are intended specifically as aids for individuals and organizations that participate directly in arrangements. However, they should also be of interest to external parties to better understand how IOAs work and to establish realistic expectations for external support.

1. The development and continuation of interorganizational arrangements follows an identifiable process and pattern. Like its member organizations and the process of improvement itself, IOAs are constantly

evolving in predictable stages of development. The following summary of IOA stages or phases, adapted from the Havelock study (IV, pp. 13-14; pp. 283-289) outlines factors influencing this evolution.

The evolution of IOAs can be divided into two phases. The development phase covers the period from the historical antecedents to full operation. Full operation or development can be reflected by: the variety of activities; extent of use of IOA services or participation in IOA activities; and the number of long term collaborations among members. The second phase involves continuation of the fully developed arrangement and includes institutionalization, i.e., "long term continuance of the arrangement as an operational entity."

Development is influenced by three factors. The first is diversity of objectives which allows the IOA to meet the varied needs and interests of members while focusing on their common improvement effort. The second factor is the set of stabilizing forces in the IOA's environment. These forces include: the predisposing conditions among member organizations, especially a history of prior collaboration and organizational homophily; the assistance and service orientations of member organizations (i.e., the willingness of member organizations to seek assistance or provide services). The stabilizing forces are balanced by catalytic forces that stimulate change. These include: the level of need or concern for changing the existing situation; the emergence or availability of dynamic leadership; the introduction of a new idea about what the IOA might accomplish; the availability of slack fiscal resources (in many instances preferably new fiscal resources, at least temporarily). The convergence of these forces leads to bargains among member organizations which, with the leader's energy and skill, bring the IOA to life.

During the early phases of development there is likely to be much trial-and-error activity as members weigh the competing forces, clarify goals and objectives, and establish mutual trust and methods of operation. There may be several detours before the group identifies a more direct route to effective cooperation. As the group moves toward full development, greater stability will emerge with clearer, though still diverse, objectives and a variety of activities. The movement to full development will likely take at least a full year, depending on the scope and complexity of the improvement effort itself and the level and nature of IOA support for the improvement.

Continuation of the arrangement depends on the occurence of a first level of outcomes in the form of the rewards and benefits experienced by IOA members and increased or strenghtened interorganizational ties. In addition, there must be a continuing sense that real needs are being served. There also must be a sense that the resources, services, and activities of the IOA are equal or superior to competing sources available to members. Where these factors occur they will lead to a renewed agreement to continue the arrangement. Usually, the early agreements are for one academic year. At later stages they may cover multiple years.

Finally, institutionalization emerges from the following elements. Member organizations must provide sustained support that is demonstrated in attitudes, behaviors, and dollars. Ideally, the support should come

from all members. However, in IOAs with large numbers of members, there must be at least a substantial core group that provide such support. There also must be a continuing and varied program of activities that mutually engage member organizations. Such activities are essential to maintain a continuity of communications and involvement as well as to meet the varied needs of members. Perhaps most important is a continuity of strong leadership that can guide the arrangement through difficulties as well as build on the energy of successes.

2. Strong leadership is essential to effective collaborative efforts. Such leadership involves multiple roles, functions, and skills. One role is that of linking agent in which the leader/coordinator must stimulate and coordinate the linkages among member organizations. Three major or modal linking roles are likely to be needed frequently: process helper, resource finder, solution giver. Also in this role the coordinator should have, or be able to quickly acquire, a thorough situational knowledge of the member organizations in order to understand the variety or diversity of needs and interests to be met in the IOA efforts.

Another role is system manager. In this role, the coordinator will be concerned with the ongoing operation of the IOA as a system, often monitoring fiscal matters, scheduling activities, coordinating and maintaining clear and regular communications, etc. Still another role is as a group facilitator in assisting members to clarify their common goals and objectives and in mediating the bargaining for resource exchanges among members. Finally, as Havelock stresses, the coordinator must also act as an IOA advocate with the energy and "clout" necessary to handle issues of faltering support as well as to handle the other roles.

Another aspect of strong leadership concerns the amount of time and back-up support required. On the basis of these six studies, it appears that a full-time or major-time coordinator position often is necessary to carry out the numerous and varied responsibilities. In addition, adequate back-up support is often necessary in the form of additional part of full-time IOA staff.

3. Mutual ownership of the collaborative effort is necessary to enhance its effectiveness and sustain member commitment. No one member organization or external party can be perceived to dominate the IOA or the other members. Members must perceive that they receive mutual rewards and benefits and also that they share in shaping the directions, operations, and outcomes. Mutual ownership can be established and maintained by assuring local autonomy of member organizations, actively engaging multiple levels of member organizations in the IOA, and actively engaging member organizations in all phases of IOA work, from planning and design to implementation of IOA activities and services.

4. Although the overall costs of collaboration are often moderate in light of the benefits, the costs should not be underestimated. The dollar costs for member organizations are often quite modest. However, the costs in terms of staff time can be much greater than expected, both for the coordinating staff and staff in member organizations. This may often be the case in the early stages of development until some regularized operation has been established. It will also probably be the case for

IOAs that involve large, complex efforts among a moderate to larger number of members. Finally, it will also occur in improvement efforts where representatives of member organizations carry the primary responsibility. In these instances, representing the organization in the IOA is usually an additional responsibility of an already fulltime position. Serving as what often amounts to voluntary implementation staff for the IOA simply adds time and energy costs for the individual participants.

C. Implications for Complex Arrangements

These implications apply primarily to arrangements that have some sort of support from an organization external to IOA members. They are particularly directed to the external organizations such as federal and state education agencies and foundations.

1. Mandates for IOA participation should include congruent conditions for carrying out the requirements. Simply stated, sponsoring agencies should clearly state any priorities and expectations that will be placed on member organizations. For example, if a sponsoring agency expects an IOA to give priority to serving high need districts, that iexpectation should be made clear to member districts and to other agencies (e.g., REAs, IHEs) that are expected to participate. Similarly, if the IOA is expected to concentrate its activities on mandated improvements over other improvements it addresses that fact should be clearly stated to all members. Finally, requirements for participation should be consistent for all member organizations in the sense that one type of organization (e.g., LEAs) should not be required to participate while other types (e.g., IHEs) are only encouraged to do so.

2. Sponsoring or mandating agencies should pay particular attention to the congruency of the roles, interests, resources and needs of different types of organizations. If one type of agency is expected to provide service to another type (e.g., LEAs), service provision should be a priority or at least an established orientation of the first organization. Moreover, the service priority or emphasis should be made clear from the outset.

3. Externally imposed structures should include flexible operating procedures to accommodate changes, particularly enlargements, in the goals, objectives, and activities of the IOA. As IOA members increase their mutual understandings, common goals, rewards and benefits they may find it appropriate to include activities or projects that go beyond the limits of the original planning, approval and fundings cycles. The IOA structure should be able to accommodate such changes. At the very least, external sponsors should be willing to negotiate changes requested by members.

4. Sponsoring agencies should have realistic expectations about the costs and benefits of collaborative improvement efforts. This implication applies particularly to six areas:

a. Costs to sponsors and members. Collaborative arrangements are not "short cuts" to improvement. Although they can provide numerous resources and benefits at a fairly modest dollar cost, they require a substantial investment of time and energy from member organizations. Either the sponsoring agency or the member organizations or both must have enough slack resources in other areas to balance the cost of this investment.

b. A sub-unit, not the organization as a whole, usually will be the direct IOA participant. In general, it is rare that sub-units not directly involved in or responsible for the improvement effort will actively participate in the IOA. If broader organizational participation is expected, appropriate incentives and rewards must be provided.

c. IOA members are no more likely to actively seek or to use explicitly research-based information than are non-IOA organizations. Like their non-IOA counterparts, they will tend to seek and rely on information and practices that are validated primarily by experience: that is, rooted in craft or situational knowledge. Even those IOA that progress to research-based information initiate their information exchange with craft and situational knowledge.

d. Collaborative arrangements tend to provide intermediate rather than ultimate benefits and outcomes related to practice improvement. Although there is considerable evidence of organizational and individual capacity building and perceived individual practice improvement in general, these improvements generally are not likely to be evident or reflected in changes in student performance attributable to IOA efforts. However, IOAs themselves can be demonstrated to be an improved strategy or practice for increasing access to resources and supporting (not implementing) improvement efforts. In general, it is still the IOA members who carry responsibility for enacting the improvement in their own organizations.

e. Continuation of a particular IOA, and hence its improvement effort, will depend in part on whether it serves a sensed real need of its members. In one sense, this indicates the opportunistic nature of members in a positive way. Where external resources are provided, IOA members will take advantage of the opportunity to pursue secondary as well as primary priorities. However, when those resources are reduced or eliminated, they are likely to use their own resources only for their own priority needs. Sponsoring agencies can enhance the likelihood for continuation of the collaborative effort by carefully targeting their own interests and resources to the priorities of potential members (especially LEAs) rather than expecting the reverse. In other words, sponsors should help identify and support local needs rather than require or expect IOA members to support sponsor preferences.

f. Given the current economic circumstance facing most educational organizations, it is not likely that even high priority IOAs will continue in the face of abrupt elimination of sizable external funds. Sponsoring agencies can increase the probability of long term collaboration in two ways. One is to include an initial agreement that external support will be on a "sliding scale" that provides greater external dollars for start up and development support then decreases to zero or a minimum

amount as member support increases. The other is to phase out currently expected support over a period of two to three years. Both methods give member organizations lead time to develop other sources of support, to find funds from their own budgets, and/or to reasonably accommodate the level of IOA efforts to the available funds.

5. State education agencies tend to be the most appropriate external sponsor. Both logic and the study evidence suggest this. State agencies have the greatest responsibility for administering, and often creating, improvement efforts most consistently relevant to the needs of their states. They also are most familiar with the needs and resources of LEAs and should have the broadest overview other educational organizations in the state. Thus, they are in the best position to establish congruent conditions for IOA efforts and to identify the most compatible types of organizations for different IOA efforts. Moreover, they tend to be the most stable source of support for LEAs and can provide a variety of meaningful incentives and rewards for IOA efforts and results.

D. Implications for Research and Development

1. Methodological Issues. Two methodological issues are raised directly and indirectly by the five case studies.

a. Simplification of case study methodology. The case studies consistently reflected the difficulties involved in studying complex social and organizational interaction at multiple levels and clearly tracing outcomes to the interactions. In particular, attention should be given to simplifying and reducing the number of variables that legitimately can be used. In addition, comparability of future studies could be enhanced and simplified by the development of quantifiable outcome measures that are also credible in reflecting the complexity and robustness of the arrangements.

b. Clarifying connections between IOA membership and ultimate practice improvements. Identifying improvements is complicated by the complexities of examining the arrangements themselves and by the IOAs' one step remove from the locus of improvement. Here again the need is for improved measures that can identify the existing connections between IOA efforts and practice improvements.

2. Substantive Issues

a. The impact of multiple ties. Synthesis findings identified or confirmed the existence of often numerous formal and informal ties among IOA members. In addition, they pointed to the importance of such ties, both past and present, in establishing a base for effective additional collaboration. However, because the studies all focused on a particular IOA or set of IOAs, there was little, if any, information about the impact of the multiple connections either on individual organizations, different types of organizations, or on the group of member organizations. Research on collaborative arrangements could usefully be expanded to identify the number and variety of ties that IOA members share (including ties not directly related to improvement as defined in these studies), and to examine

the relative strength and cumulative impact of the ties in terms of organizational rewards, benefits, dysfunctions, and organizational interdependencies.

b. Hierarchies of KU needs and IOA development. The Havelock and TDR studies have indicated a hierarchical progression of IOA tasks and interaction. For example, Havelock suggests that "more complex and system-wide changes and solutions to problems probably have to build on prior activities of a simpler nature such as knowledge transfer through courses and workshops" (Havelock IV, p. 304). The TDR study extended this notion to suggest that there is also a progression of need and use for different types of knowledge. That is, at the outset of the arrangement situational knowledge will be the most needed and most useful. As these needs are met and the collaborative tasks and knowledge needs will be expanded to craft knowledge. Only when full and extensive collaboration is achieved can research knowledge be actively sought and used. Clarification of these progressions and how they might be enhanced is important to a more complete understanding of IOAs.

c. Research on collaboration between educational and non-educational organizations. With the exception one case study, all the studies concentrated on IOAs involving only educational organizations. While such educational collaboratives appear to be predominant, there is evidence in the exploratory study that collaboration with other types of organizations can contribute substantially to various forms of school improvement. In addition, as public funding for education declines, there is growing interest by educational organizations in seeking support and collaboration from other organizations. Additional research on such collaboration is important to highlight the potential of these efforts and to identify the ways in which the arrangements and their outcomes may differ as a result of participation by organizations from different sectors.

d. Comparison of these findings with other areas of research and theory. With the completion of these studies and the synthesis, there is now a base of research on collaboration among educational organizations with which to compare and contrast the larger body of research on collaboration among other types of organizations. Although at first glance, the study results seem generally consistent with the larger literature (cf. Whetten, 1981), there are two apparent differences which may be important. One is the seemingly greater emphasis on a linear approach or sequence of development in the general literature (see also Whetten, 1981). The other is the potentially greater general emphasis on tightening loose coupling within and among IOA members.

Another useful comparison would be with informal networks and collaborations. The studies in this synthesis suggest that the degree of formality of the agreements themselves appears to have litle impact on the extent or utility of collaboration. If this is so, what advantages, if any, does formal collaboration offer (e.g., a clear point of initiation, greater visibility and commitment on the part of the organizations as opposed to individuals)?

e. Developing and testing models. These models have been derived from these studies as ways of describing what the respective investigators observed and explaining the cross-case outcomes of the studies: Yin's distinction between simple and complex arrangements; TDR's model of hierarchies of KU needs and uses of different knowledge types in collaboration; Havelock's general model for IOAs. As part of the much larger body of information in these studies, these models have been treated only superficially in this synthesis. There potential utility deserves, indeed requires, much more in-depth attention. A starting point would be to re-examine these five case studies in light of each of the models with the ultimate purpose of developing a more comprehensive general model and/or developing a set of models which account for appropriate differentiations based on features such as simple versus complex arrangements, types of organizations involved, mandated versus voluntary participation, etc. The resulting model or models could then be used either as the basis for experimental efforts or could be tested by further research on existing IOAs, both exemplary and randomly selected.

f. Research knowledge in improvement efforts. The paradox remains between the abundance of available research on educational improvement and its general lack of use by practicing educators. Here the issue concerns both research and development. One or all of these conditions seem to apply. Either we do not yet adequately understand the conditions necessary for practitioners to accept research knowledge as useful or "validated." Or research knowledge is used but more in Havelock's "stockpiling" sense and we have not yet found adequate measures to identify or trace its use over a longer term and in unobvious ways. Or we have not yet found effective ways or forms in which to present research knowledge to practitioners so that they can see or accept the validity of the results for their own efforts.

g. Development of guidelines for IOA development and evaluation. Collectively these studies indicate a substantial interest in collaboration by a variety of organizations concerned with school improvement. Such interest and participation is likely to increase as educational funding from all sources remains level or declines even further. At the same time very little information is available about how to develop and continue IOAs or how to evaluate their progress and effectiveness. The wealth of relevant information in these studies should be into a set of guidelines or handbook for coordinators of existing arrangments and those interested in initiating a collaborative effort. Moreover, the handbook should be disseminated as widely as possible, especially through practice-relevant channels such as practitioner associations and journals, regional and intermediate service agencies.

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